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APPENDIX A: TREE MARKING AND RETENTION GUIDELINES

The information in this Appendix was taken from the Wisconsin DNR *Silviculture Handbook, 2431.5*, Chapter 24 (dated December 2012). For more detail on the information outlined here, you can review Chapter 24 of the *Silviculture Handbook* on the Wisconsin DNR website at: dnr.wi.gov – keyword “*silviculture*.”

The purpose of Chapter 24 is to:

- Provide silvicultural guidelines for selecting trees to retain and remove to accomplish specific stand management objectives.
- Provide recommendations for stand-level tree and snag retention to accomplish sustainable forest management goals.
- Recommend content of written marking guidelines for prescription implementation.
- Clarify concepts and considerations related to why and how trees are selected and marked, including appropriate silvicultural methods.
- Clarify silvicultural terminology.

TIMBER MANAGEMENT – CROP TREE SELECTION

Timber crop trees are trees selected to become a component of a future commercial harvest. These trees are selected for retention and their crowns released from competition to optimize tree vigor, and focus growth on the most desirable trees. Sawtimber crop trees are the best quality, high vigor trees of desirable species that are targeted for (near) final harvest; they will be grown to rotation age or maximum desired size class.

General sawtimber crop tree selection criteria:

- Low risk of mortality or failure (main stem breakage)
- Good crown vigor
- Good timber quality
- Desirable species

Crop tree management is an important part of most marking operations. The number of crop trees to retain

and the desired residual stand density depend on management objectives, silvicultural methods, forest type and species, stand and tree condition, and site. In addition to timber crop trees, identify and retain other trees to provide multiple benefits. The selection of trees for retention strongly influences which trees will be cut.

TIMBER MANAGEMENT – SELECTING TREES TO CUT AND THE STANDARD ORDER OF REMOVAL

Before selecting trees to cut, identify desired residual stand composition and structure, and tree retention criteria (including both timber and non-timber goals and objectives). If all trees except seed trees or reserve trees will be cut, then specify seed or reserve tree objectives and characteristics, and the removal of all other trees to a minimum diameter (usually one inch DBH). For partial cuts, the characteristics of trees to cut are also delineated.

If timber management is a primary goal, and stand management objectives include the promotion of stand and tree vigor, and the production of high quality sawtimber products, then the selection of trees to cut should apply the following order of removal to achieve the desired residual stand composition and structure.

Order of removal:

1. High risk of mortality or failure (unless retained as a wildlife tree)
2. Release crop trees
3. Low crown vigor
4. Poor stem form and quality
5. Less desirable species
6. Improve spacing

The order of removal may vary somewhat depending on landowner goals, stand management objectives, and silvicultural treatment. For example, a shelterwood seed cut or the presence of exotic invasive species may elevate the removal of undesirable species. The order of removal should be clearly stated in writing prior to any marking and cutting operations.

Application of the order of removal:

The order of removal is most commonly applied during intermediate treatments, particularly thinning, and uneven-aged selection treatments.

- First, determine desired residual stand composition and structure, including crop tree characteristics and tree retention criteria (objectives, characteristics, number, and distribution), and target residual stocking.
- Then, select and mark trees to cut following the order of removal and until the desired residual stocking is achieved.

For example, during a free thinning applied to a small sawtimber stand managed only for timber production, first mark for removal all high risk trees and check residual stocking. If stocking exceeds target residual, next identify sawtimber crop trees and mark the least desirable adjacent trees to provide one- to three-sided crown release. Check residual stocking. If stocking exceeds target residual, next mark for cutting low vigor then poor quality trees. Often, target residual stocking will be achieved during this step. If not, then continue to mark, focusing on undesirable species, tree spacing, and the lowest vigor and poorest quality trees that remain, until target residual density is attained. Marking stops when actual residual stocking is near the target objective stocking.

In addition to timber crop trees, other trees are typically retained to achieve non-timber management objectives (e.g., cavity trees for wildlife). Criteria for selection and retention should be specified before marking. Selecting these trees for retention may require periodic departure from strict application of the order of removal (e.g., retain some high risk trees as cavity trees and future snags for wildlife habitat). In some cases, it may be necessary to mark these trees to ensure that they will not be cut.

TIMBER MANAGEMENT – GENERAL CRITERIA TO EVALUATE RISK, VIGOR, QUALITY, SPECIES, AND SPACING FOR TREE SELECTION

The following are definitions and specifications for terms used in crop tree selection and order of removal guidelines. Additional criteria and guidelines may be delineated for specific cover types and species.

Risk is the probability that a tree will die or fail (main stem will break) within a specified time period. It is an estimate of probable mortality or failure within the next cutting cycle.

- **High Risk:** Tree has any of the following:
 - Tree infected with canker rot fungus (see species specific criteria in other publications).
 - Canker affects greater than 50 percent of the stem's circumference.
 - Butternut canker affects greater than 20 percent of combined circumference of the stem and root collar.
 - White pine blister rust canker located where stem failure would cause a loss of greater than 50 percent of the crown.
 - Horizontal crack on a canker's face.
 - Open crack on main stem is in contact with another defect, such as decay, a canker, or a weak union (V-shaped).
 - Crack goes completely through the stem or is open (bark and wood fibers split) for greater than five feet of length.
 - Two open cracks occur on the same stem segment.
 - Cavity and associated decay affects greater than 40 percent of the stem's cross-sectional area.
 - Decay in main stem results in less than one inch of sound wood for every six inches in diameter (two inches for every six inches if a cavity is present).
 - Leaning tree with horizontal crack, long vertical crack, or buckling wood on the underside of the tree.
 - Leaning tree with recent root lifting.
 - More than 33 percent of roots severed, decayed, or otherwise compromised.

- Signs of cambium miners, such as two-lined chestnut borer or bronze birch borer.
 - Greater than 50 percent of the crown is dead.
 - Greater than 75 percent of the leaves subnormal in size or abnormal in color (this does not include color changes caused by nutrient deficiencies, fungal leaf spots, or other causes where crown recovery is expected).
- **Moderate Risk:** Tree has any of the following:
 - Canker affects 10 to 49 percent of the stem's circumference.
 - Cavity and associated decay affects 10 to 39 percent of the stem's cross-section.
 - 10 to 33 percent of roots severed, decayed or otherwise compromised.
 - 10 to 49 percent of the crown is dead.
 - **Low Risk:** Tree has no signs of defect or could have all of the following:
 - Canker affects less than 10 percent of the stem's circumference.
 - Cavity and associated decay affects less than 10 percent of the stem's cross-section.
 - Less than 10 percent of roots severed, decayed or otherwise compromised.
 - Less than 10 percent of the crown is dead.

Vigor refers to active healthy well-balanced growth of individual trees. It describes the tree's potential to grow at a rapid rate and increase volume. Vigor is evaluated based on tree crown class, size and condition.

- **Low Vigor:** Suppressed trees, not free to grow. Dominant, codominant, or intermediate trees with a poor silhouette, poor leaf condition, and many branch stubs on upper and middle bole (see "High Risk"). In hardwoods, a concentric crown less than half full; in conifers, a poor crown/length ratio.
- **Moderate Vigor:** Dominant, codominant or intermediate trees with a fair silhouette and fair leaf condition. In hardwoods, a one-half to three-quarters full concentric crown; in conifers, a fair crown/length ratio.

- **Good Vigor:** Dominant or codominant trees with a good silhouette and healthy leaves. In hardwoods, a full concentric crown; in conifers, a good crown/length ratio.

Quality (timber) refers to stem form, soundness and potential timber value of individual trees. Timber quality is evaluated based on log length, diameter and defect.

- **Poor Timber Quality:** Useable length far short of the average for the site; DBH/length ratio poor; permanently sub-merchantable in length; or heavy crook or sweep will not cut out.
- **Moderate Timber Quality:** Useable length fairly commensurate with site; DBH/length ratio fair; usable length stopper on upper bole; or moderate crook or sweep will not cut out.
- **Good Timber Quality:** Useable length commensurate with site; DBH/length ratio good; no usable length stoppers; and slight crook or sweep will cut out. Good hardwood sawtimber quality includes the potential for at least one 16 foot butt log of tree Grade 2 or better.

The effects of defects on timber quality can vary significantly, depending on the type and severity of a defect, tree species, and site factors. Due to this complexity, information specific to defect types and tree species is not described here.

Species selection is based on sustainable landowner property goals, stand management objectives, site quality, silvics, and stand condition. Desirable sawtimber crop trees are well-adapted to the site and of commercial value.

Spacing refers to the distance between stems and crowns of desirable trees, and the equal distribution of growing space.

WILDLIFE TREE AND SNAG RETENTION CRITERIA

- Large trees for habitat structure (e.g., nest trees).
 - Some low risk, good vigor trees to sustain long life.
 - Some moderate to high risk, moderate to low vigor (declining) trees to provide near-term future snags and coarse woody debris.
 - Desirable species; strive for species diversity.
- Mast trees for food.
 - Low risk.
 - Good crown vigor.
 - Strive for species diversity; hard-mast producers generally preferred over soft-mast producers.
- Cavity (den) trees for shelter.
 - With cavities in bole.
 - Larger diameter cavity trees are particularly desirable.
 - Strive for species diversity.
- Snags for habitat, shelter and food.
 - Larger diameter snags are particularly desirable.
 - Strive for diversity in species and level of decay.

Large trees are at least 12 inches DBH, and preferably greater than 18 inches DBH. Large trees greater than 18 inches DBH are uncommon. However, they provide structural diversity that increases the availability of habitat niches and can benefit an array of wildlife. Important structural features include: tall canopies that contribute to vertical stratification, large crowns and branches, and loose, furrowed bark. Importantly, the development of large trees is required for the recruitment of large cavity trees, snags and down coarse woody debris.

Mast trees are living trees that produce fruit and nuts that are consumed as food by wildlife. Large crowned vigorous trees generally produce the most mast. Increasing numbers of mast trees facilitate increased populations of some species.

Cavity (den) trees are living trees that are partially hollow and used by wildlife for shelter. Large diameter cavity trees, especially those greater than 18 inches DBH, can provide the greatest array of benefits. Increasing the number and size of cavity trees facilitate increased populations of some species.

Snags are standing dead trees. Snags benefit many species of wildlife – especially large diameter snags – which can provide the greatest array of benefits. Eventually, snags become downed coarse woody debris that also benefits wildlife and other ecosystem processes. Increasing the number and size of snags facilitates increased populations of some species. Other than the physical space occupied, snags do not compete with living trees. Retain all snags present that do not provide a threat to human safety. Those that are determined to be a threat can be cut and retained on-site as coarse woody debris.

RESERVE TREES

Reserve trees are living trees, greater than or equal to five inches DBH, retained after the regeneration period under even-aged or two-aged silvicultural systems. They can be dispersed uniformly or irregularly, as single trees or aggregated groups or patches (usually less than two acres), or any mixture thereof. They are retained well beyond stand rotation, and for purposes other than regeneration. Reserve trees may be harvested eventually or retained to complete their natural lifespan (becoming a snag and then coarse woody debris). Synonyms include standards, legacy trees, and green tree retention.

The characteristics of desirable reserve trees are highly variable and depend on the intended benefits, the species present, stand condition, and site. Desired compositional and structural attributes may be present when trees are selected and stands are rotated, or additional time may be required for development.

Typical characteristics of desirable individual reserve trees include:

- Large size (tree height, diameter, crown dimensions) for the species and site.
 - If large trees are lacking, then potential future large trees can be selected.
- Older trees with large size and rough bark.
- A mix of vigorous and declining trees.
 - Vigorous trees of long-lived species can enable long-term retention and potentially yield a variety of benefits.
 - Declining trees can provide current and future cavity trees, as well as future snags and down coarse woody debris.
- A mix of species, including locally uncommon species and mast trees.

The development and maintenance of large structures (vigorous trees, cavity trees, snags, down woody debris) and species diversity is typically encouraged.

Generally poor candidates for individual reserve trees include:

- Relatively small (height, diameter, crown), suppressed to intermediate trees.
- Relatively young trees within the stand.

These smaller, younger trees are retained in reserve groups and patches along with larger, older trees.

RESERVE TREES, MAST TREES, CAVITY TREES, AND SNAGS – RECOMMENDATIONS FOR RETENTION IN MANAGED STANDS

Sustainable forest management is implemented within a framework defined by landowner goals and objectives, ecosystem condition and potential, and

sustainable silvicultural systems and practices. Forests are cultivated to provide a variety of socio-economic and ecological benefits. Sustainable forest management integrates multiple management goals and objectives into most silvicultural systems and the management of most stands and landscapes.

Most stands that are actively managed include timber production as a management goal (often in concert with other goals). Tree retention typically focuses on crop tree selection and regeneration methods. To satisfy multiple objectives and provide multiple benefits, retain additional trees to achieve non-timber management objectives. Integrate the following recommendations for tree and snag retention into the management of most forest stands:

• **Even-aged Rotations**

- Retain three or more, preferably large, snags per acre if available.
- Retain reserve trees and/or patches at five to 15 percent crown cover or stand area, including large vigorous trees, mast trees, and cavity trees. Reserve trees and patches are not cut during stand rotation. Harvesting may occur in the future or may be foregone to achieve other benefits.

• **Even-aged Intermediate Treatments**

- Retain three or more, preferably large, snags per acre if available.
- Retain three or more, preferably large, cavity trees per acre if available.
- Retain three or more, preferably large, mast trees per acre if available.
- If previously established, manage reserve trees and patches. Management may include timber harvesting or passive retention. Consider retaining three or more trees per acre to develop into large, old trees and to complete their natural lifespan. These trees may also satisfy cavity and mast tree recommendations. These trees will often become large snags and coarse woody debris.

• Uneven-aged Systems

- Retain three or more, preferably large, snags per acre if available.
- Retain three or more, preferably large, cavity trees per acre if available.
- Retain three or more, preferably large, mast trees per acre if available.
- Consider retaining three or more trees per acre to develop into large, old trees and to complete their natural lifespan. These trees may also satisfy cavity and mast tree recommendations. These trees will often become large snags and coarse woody debris.

In cases where these recommendations for retention are not applied, then sound reasons and expected impacts of deviation should be documented.

When applying retention recommendations, be sure to consider:

- Individual trees can provide multiple benefits and fulfill the intent of more than one of the above recommendations. For example, three large oak trees with cavities could satisfy the mast tree and cavity tree recommendations, as well as the large, old tree consideration.
- Retention of both vigorous and declining trees will provide an array of benefits.
- In general, species diversity is encouraged when selecting trees to retain.

- Large trees and snags are greater than 12 inches DBH, and preferably greater than 18 inches DBH.
- Trees retained can be scattered uniformly throughout a stand or irregularly dispersed, as single trees, groups and patches. Retention in aggregated patches (0.1 to two acres) generally provides the most benefits. The general recommended strategy is to retain irregularly distributed patches along with scattered groups and individuals.
- Patches retained can satisfy multiple benefits. For example, at stand rotation, an unharvested buffer along a stream may satisfy Forestry BMPs for Water Quality and reserve tree retention recommendations.
- Retaining down coarse woody debris that is already present. Minimize disturbance including crushing, fragmenting and displacing existing down course woody debris except on roads, skid trails and landings.
- Retain as many snags as possible. Retention of snag diversity (species and size) can potentially provide the greatest array of benefits. Snags that are determined to be a threat to human safety can be cut and retained on site as coarse woody debris.
- Clearly designate, in writing and/or by marking, which trees should be retained prior to any cutting operations.

AREA (ACRES)	DIAMETER (FEET)	SQUARE (FEET)
0.1	74	66 x 66
0.25	118	104 x 104
0.5	167	148 x 148
0.75	204	181 x 181
1.0	236	209 x 209
1.5	288	256 x 256
2.0	333	295 x 295

Patch Sizes for Retention and Approximate Dimensions (Circular and Square)

APPENDIX B: SAMPLE TIMBER SALE CONTRACT¹

This Contract is entered into, by and between _____ (Seller), and _____ (Purchaser). Contact information is listed in par. 53 of this agreement.

The Seller hereby authorizes the Purchaser to enter upon the following described lands (the Premises) for purposes of cutting and removing timber marked or otherwise designated by the Seller:

County: _____ Town Name: _____

Town: _____ N; Range _____; Section _____; Legal Description(s): _____

Town: _____ N; Range _____; Section _____; Legal Description(s): _____

Those Premises are further described on the map(s) or diagram(s) attached to and made a part of this Contract.

FOR AND IN CONSIDERATION of the following terms and conditions, the Seller and the Purchaser mutually agree:

CONTRACTING PARTIES

1. CONTRACTING PARTIES.

- a. Seller and Purchaser. In this Contract, the Seller and the Purchaser include their respective officers, employees, agents, directors, partners, representatives, successors, heirs and members.
- b. Purchaser Ceases to Exist. If the Purchaser ceases to exist, in fact or by law, the Seller may terminate this Contract without waiving any remedies available to it and take all action necessary to assure its performance.
- c. Subcontracting. This Contract or work under it may not be assigned or subcontracted in part or in whole without prior written approval from the Seller and may be changed or amended only in writing. The Purchaser agrees to notify the surety, if any, of any such change or amendment.

ENTIRE CONTRACT

2. ENTIRE CONTRACT. This Contract, together with specifications in the request for bids as well as reference to parts and attachments, shall constitute the entire agreement and any previous communications or agreements pertaining to this Contract are hereby superseded. Any amendments to this Contract shall be in writing, signed and dated by both parties.

3. ATTACHMENTS. Any and all attachments to this Contract shall be made a part of this Contract and be fully complied with, including:

- a. Map(s) or Diagram(s) of Sale Area;
- b. Payment Schedule and Conditions of Payment;
- c. Other: _____

CONTRACT PERFORMANCE, PERIOD, EXTENSIONS AND TERMINATION

4. PERFORMANCE.

- a. Commencement. Cutting and removal of timber in conformance with this Contract may commence and continue only after the signing of this Contract by both parties and only after submission and maintenance of all bonds, certificates or statements required under it.

¹ Where options are listed with "OR," strike the option(s) that do(es) not apply.

- b. Contract Oversight. Cutting and removal of timber purchased under this Contract shall be conducted in conformance with this Contract and in a good and workmanlike manner with reasonable diligence to assure completion of all performance within the Contract period specified in par. 5. The Purchaser shall notify the Seller or the Seller's Agent 36-48 hours prior to commencing harvest of the timber designated herein and upon completion of the cutting. In the event that the harvest is temporarily discontinued for more than one week, the Purchaser agrees to notify the Seller or the Seller's Agent _____ (Agent's name) both upon discontinuance and resumption of harvest. Notification under this paragraph may be made by telephone to _____ (phone number). The Seller or the Seller's Agent may require an onsite meeting before commencement of harvesting.
- c. Inspection. The Seller retains the right of ingress and egress to and on the sale area and may inspect the sale area and trucks hauling forest products from or traveling on the sale area at any time. If the inspection reveals any violations of this Contract the Seller shall promptly notice the Purchaser. Upon notice from the Seller, the Purchaser shall promptly take measures to remedy the violation.
- d. Access. The Purchaser has no access or privilege to go upon the Seller's property other than to comply with this Contract and may not authorize access or use to others except for the sole purpose of performing this Contract.

5. CONTRACT PERIOD.

- a. All work under this Contract shall be completed between the signing of the Contract by both Parties and _____ (Contract ending date), FOR TIME IS OF THE ESSENCE. Contract amendments or extensions may not be relied upon by the Purchaser for the purpose of completing performance under this Contract.
- b. The Seller may temporarily suspend operations under this Contract due to excessive property damage, wet conditions or at other reasonable² times upon notice to the Purchaser or other persons operating on the sale area under this Contract with subsequent equitable adjustment of this Contract as mutually agreed upon by the parties.

6. CONTRACT EXTENSIONS. If extensions of this Contract are deemed reasonable by the Seller, the stumpage price agreed upon herein shall be adjusted as follows:

- a. First six-month extension: 0% increase
- b. Second six-month extension: 5% increase
- c. Additional six-month extensions: 10% increase
- d. Other applicable charges or fees: _____

7. TERMINATION. The Seller may terminate this Contract by oral or written notice to the Purchaser upon its breach. Upon such notice, the Purchaser shall cease all operations on and immediately leave, and not return to, the Seller's property unless otherwise provided by the Seller.

DOWNPAYMENT, BOND, REMEDIES AND DAMAGES

8. DOWNPAYMENT. The Purchaser has given the Seller a down payment in the form of cash, a certified check, or other form acceptable to the Seller in the amount of \$_____ [if none, enter "zero"] to commit to completion of the timber sale in a timely manner as specified in the Contract.

9. BOND.

- a. A performance bond in the Seller's favor in the amount of \$_____, in cash, by surety bond, or in any other form accepted by the Seller, shall be submitted by the Purchaser no later than _____ to be retained by the Seller to assure full and complete performance of the Contract by the Purchaser to the Seller's satisfaction. Failure to submit the bond shall be considered a breach of this Contract and subject the Purchaser to liability for damages. The Purchaser agrees that the bond shall be forfeited to the Seller as

² "Reasonable" in this contract is defined as fair, proper, just, moderate, and suitable under the circumstances, not arbitrary or capricious.

liquidated damages upon the Seller's determination that a condition or term of this Contract has been breached by the Purchaser, unless the Seller chooses and can reasonably determine the actual damages suffered as a result of the breach of the Contract. Damages assessed under this Contract are the responsibility of the Purchaser and may be deducted from this performance bond and otherwise collected by the Seller.

- b. The Purchaser agrees that the performance bond may be retained by the Seller until all performance under this Contract has been completed to the Seller's satisfaction and the Seller determines the performance has been so completed. If the Seller determines the performance has not been completed satisfactorily and in conformance with this Contract, the performance bond may be retained by the Seller until the Seller can determine damages caused by the lack of performance. Only in the event the Purchaser provides written notice of sale completion to the Seller shall the Seller have sixty (60) days to determine that performance has been completed as required under this Contract.

10. REMEDIES.

- a. If timber or other forest products not specifically described in this Contract or designated by the Seller for cutting are cut, unreasonably damaged or removed by the Purchaser, the Seller may pursue any and all remedies for the unlawful use of the Seller's property and the cutting, unreasonable damage or removal of property without consent, including the seeking of criminal or civil charges for theft, timber theft or criminal damage to property, in addition to any Contract remedies for breach.
- b. If the Seller or Purchaser seeks damages for breach of this Contract through court proceedings, and if either party prevails in such proceedings, in whole or in part, then the non-prevailing party agrees to pay all of the prevailing party's actual and reasonable expenses, including attorneys and expert witness fees.
- c. The Seller agrees to mitigate the damages for breach by offering the timber for resale if it determines the timber is saleable based upon its volume or quality.
- d. The Seller may, when it deems it reasonable and in the best interest of the Seller, allow the Purchaser to continue performance under the Contract and the Purchaser shall pay as liquidated damages double the mill value as determined by the Seller for the timber or other forest products cut, removed or damaged without authorization under or in violation of this Contract. The Seller's permission to continue cutting shall not be considered a waiver of breach nor prevent it from considering such breach for purposes of asserting any other remedies available to it. It is agreed that the double mill scale sum is a reasonable estimate of the probable damages suffered by the Seller and shall not be construed as or held to be in the nature of a penalty.

11. DAMAGES. The damages to be paid to the Seller upon the Purchaser's failure to perform this Contract include, but are not limited to:

- a. The difference between the Purchaser's bid value of timber not cut and removed under this Contract and the value returned to the Purchaser. The Seller agrees to mitigate the damages for breach by offering the timber for resale within 12 months if the Seller determines the timber is salable based upon its volume or quality.
- b. Triple average current stumpage rate value established under the authority given in s. 77.91 (1), Wis. Stats., for timber cut, removed or unreasonably damaged without authorization under or in violation of this Contract. The Seller's decision to assess triple damages as provided here and to allow the Purchaser to continue performance under this contract shall not be construed as a waiver of other contract performance requirements.
- c. All costs of sale area cleanup or completion of performance not completed by the Purchaser.
- d. All costs of resale of timber not cut and removed as required under this Contract.
- e. The Purchaser agrees that if the timber identified in this Contract for cutting is to be resold due to a breach of this Contract, the Seller is not obligated to give oral or written notice to the Purchaser of the resale.
- f. Additional damage provisions: _____

PRODUCTS TO BE REMOVED

12. No forest products may be removed from the Premises until the Purchaser pays for the products or guarantees payment for the products to the satisfaction of the Seller.
13. Title to stumpage and any forest products cut under this Contract shall remain with the Seller until payment is received. Title to stumpage and cut products that are not cut and removed before the end of the Contract period, even though paid for, shall revert to the Seller, and the Seller shall be under no obligation to return payments to the Purchaser.
14. During the period of this Contract, the Purchaser is authorized and shall cut, remove and pay for the timber or forest products marked or designated as follows: _____

SALE TYPE, SCALING, HAULING AND PAYMENTS

15. SALE TYPE³ [select one of the following three choices and strike the others]

- OR → **LUMP SUM SALE:**
The Purchaser agrees to pay Seller an amount of \$_____, to be paid in full prior to the commencement of timber cutting, based on the volume estimates and unit values in Par. 17 Timber Products Table. The Seller is not obligated to return the payment or any portion of it in the event the Purchaser fails to remove all timber or forest products authorized for removal.
- OR → **SCALED PRODUCTS SALE:**
FLAT RATE METHOD. The payment as established by the Price per Unit in Par. 17 shall be based on sawtimber, cordwood, or piece product volume as measured by product dimensions. **The price paid per board feet, cord, ton, or piece is a flat rate regardless of the quality, final destination or use of the cut product.** Hardwood less than 10.6 inches in diameter at the small end of the log, inside the bark (d.i.b.), shall be measured as cordwood and 10.6 inches or greater d.i.b. as sawtimber. For conifers, the division between cordwood and sawtimber is 9.6 inches d.i.b. Sawtimber with 50% or more cull shall be measured as cordwood. The volume shall be measured by _____ (name), an agent of the Seller / the Purchaser / the primary processing facility (the Mill or its agent) to whom the Purchaser delivers the product and to whom the cut product is sold [strike the choices that do not apply].
- OR → **SCALED PRODUCTS SALE:**
GRADED PRODUCT METHOD. The payment as established by the Price per Unit in Par. 17 shall be based on the volume of *graded* products including fuel wood, pulpwood, sawbolts, sawtimber by grade, veneer by grade, piece products (such as posts and utility poles) by grade, and comingled products by grade. **In addition to product dimension, the price paid depends upon the quality or intended use of the cut product or type of processing facility the cut product is destined.**⁴
The volume and grade shall be determined by _____ (name), an agent of the Seller / the Purchaser / the primary processing facility (the Mill or its agent) to whom the Purchaser delivers the product and to whom the cut product is sold [strike the choices that do not apply].

³ *Lump sum and scaled products-flat rate methods are the most commonly accepted sale types. Landowners may have difficulty in finding purchasers willing to enter into graded product method sales, which are more difficult to administer.*

⁴ *For example, cordwood delivered to a paper mill would be paid for as pulpwood. Cordwood delivered to a sawmill would be paid for as sawbolts or sawlogs.*

16. HAULING PROCEDURE⁵ AND PAYMENT SCHEDULE FOR SCALED SALES [select one of the following two choices and strike the other]

- OR → **ON SITE SCALE.** No products may be hauled from the Seller’s property until scaled and paid for or payment has been arranged to the Seller’s satisfaction in writing. Removing products otherwise shall be a violation of this Contract and considered theft.
- OR → **MILL SCALE.** The Purchaser shall keep a record of each load removed and its destination. Addresses of the Mills where wood products are to be delivered shall be given to the Seller before cutting begins. The Purchaser shall provide Mills with the Seller’s name and address for each load and request Mills to provide copies of the mill scale slips to the Seller within _____ days of receipt of the wood products. Failure to keep a record of any load and its destination shall be a violation of this Contract and considered theft. Payments shall be made according to the following schedule [pick one of the following three choices and strike the others]:
 - OR → The Purchaser shall pay the Seller for the products delivered to the Mill, as measured on the mill scale slip, within _____ days of delivery. The Purchaser shall include copies of the mill scale slips with payments.
 - OR → Payment to the Seller shall be made in advance of hauling, with the value of the measured volume on the mill scale slips deducted from the Purchasers stumpage payment balance. The Seller agrees that advance stumpage payments shall not be used for any purpose other than the stumpage account and that any excess payments shall be returned to the Purchaser within 60 days after the last load is hauled from the Seller’s property.
 - OR → The Mill shall make payments for delivered products directly to the Seller within _____ days of delivery by the Purchaser. Copies of the mill scale slips shall be included with payments to the Seller.

17. TIMBER PRODUCTS TABLE.

The Purchaser agrees to pay the Seller the unit price for the volume of product by species that is harvested. In the case of lump sum sales, the unit prices shall be used for sale add-ons or calculation of damages.

Species to be Harvested	Product (Sawtimber, Cordwood, Posts, Poles, Biomass, etc.)	Estimated Volume	Price per Unit (MBF ⁶ , Cord, Piece, etc.)	Total Value of Estimated Volume
TOTAL ESTIMATED VALUE:				

⁵ Information about an additional “Ticket System” for log hauling is also available from DNR, but is seldom used on private lands.
⁶ “MBF” means “thousand board feet.”

- 18. Sawtimber volumes shall be determined by the Scribner Decimal C system (required for land enrolled under the Managed Forest Law or Forest Crop Law programs in Wisconsin).
- 19. Cord means 128 cubic feet⁷ of wood, air and bark assuming careful piling. Peeled cordwood shall be converted to standard cords using the Wisconsin DNR conversion specifications published in chapter NR 46.30 (1) (d), Wisconsin Administrative Code.
- 20. Weight volumes shall be in tons, meaning 2,000 pounds per ton, U.S. measure. For Products measured by weight but paid for by cord the weights shall be converted to standard cords using one of the following⁸:
 - a. the Wisconsin DNR conversion specifications published in chapter NR 46.30 (1) (g)
 - b. the following weight conversions agreed to by the Seller and the Purchaser:

SPECIES	WEIGHT/CORD	SPECIES	WEIGHT/CORD
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

- 21. The volumes of timber indicated in this Contract or other appraisal or cruise documents of the Seller are estimates. The Seller gives no warranty or guarantee respecting the quantity, quality or volume of marked or otherwise designated timber or forest products on the sale area.

UTILIZATION AND OPERATIONS

- 22. **STUMP HEIGHT; TOPS.** Tree stumps shall be cut as close to the ground as practical, otherwise maximum stump height shall not exceed stump diameter; and for stumps ten or more inches in diameter, stumps shall not exceed 10 inches in height. For sales including cordwood products, trees shall be utilized to a 4" minimum top diameter. For sales including biomass products, utilization of tops shall follow guidelines established in *Wisconsin's Forestland Wood Biomass Harvesting Guidelines*, a 2014 publication of the Wisconsin Council on Forestry and the Wisconsin DNR. Title to tops shall remain with the Seller and may not be utilized by the Purchaser, or at the Purchaser's direction, unless otherwise specified in this Contract.
- 23. **WASTE.** The Purchaser agrees to complete all operations and performance as described in this Contract without waste or nuisance on the sale area or any other property of the Seller or adjoining land used in conjunction with the harvest and use reasonable care not to damage trees not designated or marked for cutting. Young trees bent or held down by felled trees shall be promptly released.
- 24. **ZONE COMPLETION.** The Purchaser agrees to complete all operations on each portion of the sale area or each zone as designated on the sale area map, or other attachments or in the cutting requirements before beginning cutting in the next portion or zone, unless agreed to otherwise by the Seller.
- 25. **DIGGERS HOTLINE.** The Purchaser is responsible to contact the diggers hotline, or other informational sources performing similar services, prior to digging or conducting other activities on the property which may result in contact with utility or service lines or facilities.
- 26. **ROADS, LANDINGS, MILL SITES, CAMPSITES, EROSION CONTROL, BEST MANAGEMENT PRACTICES (BMPs).**
 - a. When not otherwise designated by the Seller, the location of roads, landings, mill sites and campsites on Seller's property are subject to advance approval and under the conditions established by the Seller. All restoration, cleanup or repair of roads, bridges, fences, gates, landings, mill sites and campsites, or the cost of the cleanup, if not completed by the Purchaser to the reasonable satisfaction of the Seller, is the responsibility of the Purchaser.

⁷ Mills may measure cordwood with a 4" trim allowance, resulting in 133 cubic feet.

⁸ Proposed weight conversions should be included in the timber sale prospectus.

- b. Logging debris accumulated at landing areas shall be scattered within the sale area to the reasonable satisfaction of the Seller.
- c. Berms constructed on the Seller’s property shall be leveled to restore the area to the Seller’s satisfaction unless they are constructed at the direction of the Seller under sub d.
- d. Roads and landings shall be graded or closed upon the request of and to the Seller’s satisfaction upon completion or termination of this Contract.
- e. Other restoration requirements (e.g., seeding, gravel, rutting, culvert removal, etc.): _____
- f. The Purchaser agrees to comply with the Best Management Practices (BMP) guidelines as described in *Wisconsin’s Forestry Best Management Practices for Water Quality* published by the Wisconsin DNR, publication FR-093. Identify BMPs of particular concern: _____
- g. The Purchaser agrees to take precautions to prevent the spread of invasive species as described in Wisconsin Department of Natural Resources’ invasive species guidelines. Identify species and actions of particular concern: _____

27. SOIL DISTURBANCE AND RUTTING

- a. The Purchaser agrees to take all steps and precautions to avoid and minimize soil disturbances, such as soil compaction and rutting. If soil disturbances occur, the Purchaser agrees to work cooperatively to mitigate and repair any and all instances of soil disturbance.
- b. Excessive soil disturbance (as defined in Table 1) shall not be permitted. Purchaser agrees to contact Seller in the event of an excessive soil disturbance.

Table 1. Thresholds for soil disturbances.

TIMBER SALE INFRASTRUCTURE	SOIL DISTURBANCES ARE EXCESSIVE IF:
Roads, Landings, Skid Trails, and General Harvest Area	<ul style="list-style-type: none"> • A gully or rut is six inches deep or more and is resulting in channelized flow to a wetland, stream, or lake.
Roads, Landings, and Primary Skid Trails	<ul style="list-style-type: none"> • In a riparian management zone (RMZ) or wetland, a gully or rut is six inches deep or more and 100 feet long or more. • In an upland area (outside of RMZ), a gully or rut is 10 inches deep or more and 66 feet long or more.
Secondary Skid Trails and General Harvest Area	<ul style="list-style-type: none"> • A gully or rut is 6 inches deep or more and 100 feet long or more.

NOTE: The depth is to be measured from the original soil surface to the bottom of the depression. If individual lug depressions are visible, the depth would be measured to the lesser of the two depths (the “top” of the lug). The length is measured from the start of the “too deep” section to the end of the “too deep” section. Measurements are not cumulative.

- c. Prior to sale completion the Purchaser shall mitigate and repair soil disturbances to the Seller’s satisfaction.
- d. Other restoration requirements (e.g., repair of soil disturbance or rutting on recreational trails used for skidding):
 - (1) _____
 - (2) _____

28. OTHER APPROVALS. Logging roads that intersect town, county or state roads or highways must have the intersections approved by the proper authorities prior to construction and cleared of all unsightly debris at the time of construction. The Purchaser agrees to apply for and obtain all approvals. The Purchaser also agrees to fully comply with all terms and conditions of intersection approvals.

29. SURVEY MONUMENTS. The Purchaser agrees to comply with s. 59.635, Wis. Stats., regarding perpetuation of landmarks and pay for the cost of repair or replacement of property or land survey monuments or accessories which are removed, destroyed or made inaccessible.

30. FOREST FIRE PREVENTION. The Purchaser agrees to take reasonable precautions to prevent the starting and spreading of fires. Those precautions include, but are not limited to:

- a. A minimum of one fully charged 5 pound or larger ABC fire extinguisher with a flexible spout shall be carried on each off road logging vehicle.
- b. All chain saws and all non turbocharged off road logging equipment used in the operation shall be equipped with spark arrestors that have been approved by the U.S. Forest Service. Such arrestors may not be altered in any manner or removed and shall be properly maintained.
- c. If a fire occurs, the Purchaser agrees to promptly report the fire and cooperate in the control and suppression of the fire.
- d. The Purchaser shall comply with requests regarding forest fire prevention and suppression made by the Seller and take all reasonable precautions to prevent, suppress and report forest fires. Those requests may include ceasing or modifying operations.
- e. The Purchaser shall be responsible for damage and forest fire suppression costs, including that provided in ss. 26.14 and 26.21, Wis. Stats., caused by their operation under this Contract.
- f. Other: _____

31. SLASH REMOVAL. Slash as defined in s. 26.12, Wis. Stats., shall be disposed of as follows:

- a. Slash falling in any lake or stream, in a right of way or on land of an adjoining landowner shall be immediately removed from the waters, right of way or adjoining land. Tops from felled trees may not be left hanging in standing trees. All trees shall be completely felled and not left leaning or hanging in other trees.
- b. Other: _____

32. CLEANUP AND USE OF SALE AREA.

- a. The Purchaser shall remove equipment, tools, solid waste and trash remaining on the sale area or Seller’s property or adjoining land used in conjunction with the harvest upon completion of performance under this Contract, termination of this Contract due to breach by the Purchaser or when requested by the Seller.
- b. No residence, dwelling, permanent structure, or improvement may be established or constructed on the sale area or other property of the Seller.

33. HAZARDOUS MATERIALS. The Purchaser agrees to properly use and dispose of all petroleum and hazardous products, including but not limited to oil, oil filters, grease cartridges, hydraulic fuel and diesel fuel. Any on site spillage must be properly reported, removed and cleaned up by the Purchaser in accordance with applicable statutes and rules of the State of Wisconsin.

34. ADDITIONAL UTILIZATION AND OPERATION REQUIREMENTS AND INSTRUCTIONS:

- a. Between April 15 and August 15 all pine products must be removed from the site within two weeks, regardless of when they were harvested.
- b. Oak wilt prevention: where oak trees are present, no cutting is allowed between _____ and _____.
- c. No trees or products over 16 feet in length may be skidded within the cutting area without written permission of the Seller.
- d. Other (If none, state None.) _____

NOTICE OF INTENT TO CUT AND COMPLIANCE WITH LAWS

35. SECTION 77 NOTICE AND REPORT. The Seller / Purchaser [select one] shall file required cutting notices and cutting reports to the responsible DNR forester for lands that are under the Forest Crop Law and Managed Forest Law programs.

36. SECTION 26 NOTICE. The Seller / Purchaser [select one] shall file a declaration annually⁹ with the county clerk in any manner acceptable to the county of his or her intentions to cut forest products pursuant to section 26.03, Statutes, and comply with all other notice requirements, laws and ordinances with respect to work under this Contract.

37. OTHER PERMITS. The Seller and Purchaser shall work together on acquiring other necessary permits (such as wetland or stream crossing permits).

38. APPLICABLE LAW. This Contract shall be governed by the laws of the State of Wisconsin. The Purchaser shall at all times comply with all federal, state, and local laws, ordinances and regulations in effect during the Contract period.

TITLE, BOUNDARY LINES AND ACCESS

39. TITLE. The Seller warrants that the Seller has clear and unencumbered title to the stumpage subject to this Contract.

40. BOUNDARY LINES. The Seller guarantees to have the boundaries marked with paint or other suitable means before any timber is harvested.

41. ACCESS. The Seller agrees to secure entry and right-of-way to the Purchaser on and across the area covered by this Contract, including access via land owned by a third-party if necessary.

LIABILITY AND INSURANCE

42. The Purchaser agrees to protect, indemnify and save harmless the Seller and the Seller's employees and agents from and against all causes of action, claims, demands, suits, liability or expense by reason of loss or damage to any property or bodily injury to any person, including death, as a direct or indirect result of timbering operations under this Contract or in connection with any action or omission of the Purchaser, who shall defend the Seller in any cause of action or claim.

⁹ County cutting notices expire by law on December 31 and so must be renewed annually.

- 43.** Unless the Purchaser is exempted by the Seller from this coverage requirement as an independent contractor, as defined in s. 102.07(8)(b), Stats., and as determined by the Seller based on an affidavit submitted to it, the Purchaser agrees to elect to maintain worker's compensation insurance coverage for the cutting operation under this Contract and any and all employees engaged in cutting on the Seller's land during the period of this Contract regardless of any exemptions from coverage under chapter 102, Wis. Stats. The Purchaser must provide an original certificate of insurance naming the Seller as a certificate holder so the insurance carrier can notify the Seller should the insurance expire.
- 44.** The Purchaser agrees to furnish the Seller with a certificate of public liability insurance covering the period of logging operations on the Seller's property for:
- a.** \$1,000,000 single limit liability for personal injury or \$1,000,000 bodily injury per person and \$1,000,000 per occurrence; and
 - b.** \$100,000 property damage.
- 45.** The Purchaser shall notify the Seller in writing, immediately upon any change in or cancellation of insurance coverage required by this Contract.
- 46.** The Purchaser is an independent contractor for all purposes including Worker's Compensation and is not an employee or agent of the Seller. The Seller agrees that the undersigned Purchaser, except as otherwise specifically provided herein, shall have the sole control of the method, hours worked, time and manner of any timber cutting to be performed hereunder. The Seller reserves the right only to inspect the job site for the sole purpose of insuring that the cutting is progressing in compliance with the cutting practices established under this Contract. The Seller takes no responsibility for supervision or direction of the performance of any of the harvesting to be performed by the undersigned Purchaser or its employees. The Seller further agrees to exercise no control over the selection and dismissal of the Purchaser's employees.
- 47. OSHA COMPLIANCE, DANGER TREES.** The Purchaser is responsible to comply with, and assure compliance by all employees or subcontractors with, all Occupational Safety and Health Act (OSHA) requirements for the health and safety of Purchaser's employees, including provisions relating to danger trees. In addition, the Purchaser agrees to notify, and obtain agreement from, the Seller if the Purchaser intends to modify performance required under this Contract for the purpose of compliance with OSHA requirements. Notwithstanding OSHA regulations, the Purchaser agrees to apply appropriate safety precautions.
- 48. ACTS OF GOD.** Neither party shall be liable for defaults or delays due to acts of god or the public enemy, acts or demands of any government or governmental agency, strikes, fires, flood, accidents or other unforeseeable causes beyond its control and not due to its fault or negligence. Each party shall notify the other in writing of the cause of such delay within five days after the beginning thereof. If such uncontrollable circumstances continue for 30 days and prevent either party from complying with the terms of this agreement, either party shall have the option of terminating upon ten days notice to the other.

TRAINING (Recommended)

- 49. TRAINING REQUIREMENT.** The Purchaser is responsible for ensuring that the actual logging contractor engaged in performance of this Contract holds a current logging safety training certificate issued by the Forest Industry Safety & Training Alliance (FISTA) or equivalent safety training acceptable to the seller. Purchaser agrees to provide documentation to Seller that training has been attained prior to initiating sale.

FOREST CERTIFICATION (if applicable)

50. CERTIFICATION STANDARD AND CERTIFICATE. The land management area encompassed by this timber sale is certified to the following forest certification standards (mark as applicable and provide valid certificate numbers):

<input type="checkbox"/> American Tree Farm System® (ATFS)	Certificate # _____
<input type="checkbox"/> Forest Stewardship Council® (FSC®)	Certificate # _____
<input type="checkbox"/> Sustainable Forestry Initiative® (SFI®)	Certificate # _____
<input type="checkbox"/> (Other Standard) _____	Certificate # _____

51. CHAIN OF CUSTODY. Forest certification chain of custody provided by the Seller under the preceding certificates ends at the stump, log landing or roadside.

52. APPROVED CUTTING NOTICE. In the event that land management area encompassed by this timber sale participates in the Wisconsin Managed Forest Law Certified Group, the Seller agrees to provide the Purchaser with a copy of the Wisconsin DNR approved Cutting Notice (DNR Form 2450-32), either submitted by a forestry professional registered with the Wisconsin DNR, or reviewed and approved by the Wisconsin DNR at the landowner’s request.

CONTACT INFORMATION

53. CONTACT INFORMATION:

(NOTE: Separate from this form, the Seller and Purchaser are encouraged to provide one another with their Social Security Number or Federal Employer ID Number, needed to file tax returns or other financial documents.)

SELLER

PURCHASER

Name: _____
 Address: _____

 Phone: _____
 Cellular Phone: _____
 Email: _____

Name: _____
 Address: _____

 Phone: _____
 Cellular Phone: _____
 Email: _____

We have read and understand this entire Contract comprised of _____ pages.

SELLER

Date: _____

By: _____

PURCHASER

Date: _____

By: _____

APPENDIX C: FOREST CERTIFICATION

As of 2016, more than 7.5 million acres (48 percent) of Wisconsin's private and public forestlands have achieved third-party certification by one or more forest certification systems. The forest certification programs active in Wisconsin include the American Tree Farm System® (ATFS), a program of the American Forest Foundation, Forest Stewardship Council® (FSC®), and the Sustainable Forestry Initiative® (SFI®). Forestland enrolled in a forest certification system must conform to the system's standards for responsible forest management. The goal of each system is to ensure that on-the-ground forest management meets a set of rigorous, comprehensive measures of sustainable forest management and environmental protection.

HOW DOES CERTIFICATION HELP PROMOTE SUSTAINABLE FORESTRY?

Forest certification systems are market-based, non-regulatory means to assure end users that the wood products they purchase have been grown, managed, and harvested in socially acceptable and environmentally responsible ways. The performance indicators that have been developed by each system serve to provide a common understanding of what sustainable forest management is, and a way to measure whether a landowner or land manager is achieving that goal. These market-based solutions provide landowners, land managers and the forest products industry with an economic incentive to pursue sustainable forest management as a means to maintain existing markets, and to expand market share as demand for certified products grows.

FOREST CERTIFICATION SYSTEMS: SUMMARY AND OVERVIEW

THE AMERICAN TREE FARM SYSTEM

The American Tree Farm System® (ATFS), started in 1941, was the first program in the United States to have measurable standards and to recognize landowners who met those standards. This program grew out of the forest products industry's need to demonstrate to the public that their management practices were sustainable. You can learn more about the ATFS and their Standards of Sustainability at: www.treefarmssystem.org/certification-american-tree-farm-standards.

The ATFS 2015 - 2020 Standards of Sustainability has eight standards that are used to evaluate sustainable forest management. Each standard has performance measures and indicators, which further define the requirements of the standard and are used by the auditor(s) to determine compliance.

Standard 1.....	Commitment to Practicing Sustainable Forestry
Standard 2.....	Compliance with Laws
Standard 3.....	Reforestation and Afforestation
Standard 4.....	Air, Water, and Soil Protection
Standard 5.....	Fish, Wildlife, Biodiversity and Forest Health
Standard 6.....	Forest Aesthetics
Standard 7.....	Protect Special Sites
Standard 8.....	Forest Product Harvests and Other Activities

ATFS EXAMPLE*

An example of a complete section of the Standard (2) with one of the Performance Measures (2.1) and one of the Indicators (2.1.1) within the ATFS requirements:

Standard 2: Compliance with Laws

Forest management activities comply with all relevant federal, state and local laws, regulations and ordinances.

Performance Measure 2.1: Landowner shall comply with all relevant federal, state, county, and municipal laws, regulations, and ordinances governing forest management activities.

- **Indicator 2.1.1:** Landowner shall comply with all relevant laws, regulations and ordinances and will correct conditions that led to **adverse regulatory actions**, if any.

* The example provided for each of the certification systems describe how each system addresses compliance with laws.

THE FOREST STEWARDSHIP COUNCIL

The Forest Stewardship Council® (FSC®) grew out of concerns over tropical deforestation. The first General Assembly of the FSC® in 1993 was a meeting of loggers, foresters, environmentalists, and sociologists who were determined to act because the Rio Earth Summit in 1992 failed to produce an agreement to stop deforestation. Their goal was to develop a system that would create a market-driven approach to create demand for sustainably sourced forest products. You can learn more about the FSC® and their principles and criteria at: us.fsc.org/en-us/certification/forest-management-certification.

The FSC® has 10 principles which are used to evaluate sustainable forest management. Each principle is defined by a number of criteria and indicators which are assessed to verify compliance.

Principle 1.....	Compliance with Laws and FSC® Principles
Principle 2	Tenure and Use Rights and Responsibilities
Principle 3	Indigenous Peoples' Rights
Principle 4.....	Community Relations and Worker's Rights
Principle 5	Benefits from the Forest
Principle 6	Environmental Impact
Principle 7	Management Plan
Principle 8	Monitoring and Assessment
Principle 9	Maintenance of High Conservation Value Forests
Principle 10.....	Plantation Management

FSC® EXAMPLE*

An example of a complete section of the principle (1) with one of the criteria (1.1) and two of the Indicators (1.1.a and 1.1.b) within the FSC® requirements:

Principle 1: Compliance with Laws and FSC® Principles

Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC® Principles and Criteria.

Criteria 1.1: Forest management shall respect all national and local laws and administrative requirements.

Indicators:

- *1.1.a: Forest management plans and operations demonstrate compliance with all applicable federal, state, county, municipal, and tribal laws, and administrative requirements (e.g., regulations). Violations, outstanding complaints or investigations are provided to the Certifying Body (CB) during the annual audit.*
- *1.1.b: To facilitate legal compliance, the forest owner or manager ensures that employees and contractors, commensurate with their responsibilities, are duly informed about applicable laws and regulations.*

* The example provided for each of the certification systems describe how each system addresses compliance with laws.

THE SUSTAINABLE FORESTRY INITIATIVE

The SFI® program is committed to continuously improve responsible forest management. SFI® program participants must meet or exceed applicable water quality laws and regulations, with measures to manage and protect water wetlands and riparian zones on certified lands. They must continually evaluate habitat and biodiversity impacts from forest activities – which leads to improved habitat quality, and protection of imperiled or critically imperiled species. You can learn more about the SFI® and their standard at: www.sfi-program.org/sfi-standard-forest-management-standard/.

The SFI® 2015 - 2019 Forest Management Standard has defined 13 guiding principles that are the basis for 15 objectives used to evaluate sustainable forest management. The applicable objectives depend upon the type of operation being assessed. Each objective has performance measures which are further defined by Indicators which are assessed to verify compliance.

Forest Land Management Objectives

Objective 1	Forest Management Planning
Objective 2	Forest Health and Productivity
Objective 3	Protection and Maintenance of Water Resources
Objective 4	Conservation of Biological Diversity including Forests with Exceptional Conservation Value
Objective 5	Management of Visual Quality and Recreational Benefits
Objective 6	Protection of Special Sites
Objective 7	Efficient Use of Fiber Resources
Objective 8	Recognize and Respect Indigenous Peoples' Rights
Objective 9	Legal and Regulatory Compliance
Objective 10	Forestry Research, Science and Technology
Objective 11	Training and Education
Objective 12	Community Involvement and Landowner Outreach
Objective 13	Public Land Management Responsibilities
Objective 14	Communications and Public Reporting
Objective 15	Management Review and Continual Improvement

SFI® EXAMPLE*

An example of a complete section of Objective 9 with one of the performance measures (9.1) and three of the indicators (1, 2 and 3) within the SFI® requirements for legal and regulatory compliance:

Objective 9: Legal and Regulatory Compliance

To comply with applicable federal, provincial, state and local laws and regulations.

Performance Measure 9.1: Program participants shall take appropriate steps to comply with applicable federal, provincial, state and local forestry and related social and environmental laws and regulations.

Indicators:

1. Access to relevant laws and regulations in appropriate locations.
2. System to achieve compliance with applicable federal, provincial, state or local laws and regulations.
3. Demonstration of commitment to legal compliance through available regulatory action information.

* The example provided for each of the certification systems describe how each system addresses compliance with laws.

RELATING CERTIFICATION STANDARDS, PRINCIPLES AND OBJECTIVES TO WISCONSIN FOREST MANAGEMENT GUIDELINES

When working on forest land enrolled in a forest certification system the manager is responsible to understand the applicable forest certification system's standards and their implementation. The following tables (see pages Appendix C-5 and Appendix C-6) provide a summary of ATFS standards, FSC® principles, and SFI® objectives which might apply to management practices discussed in each chapter of *Wisconsin Forest Management Guidelines*. This list is not inclusive and may change as each certification system improves and updates their standards.



The mark of
responsible forestry



WHAT ARE THE DIFFERENCES?

Comparing these systems to identify the one that best fits a landowner's needs can be difficult. Each program has strengths and weaknesses depending on the type of operation being evaluated. For example, ATFS was developed specifically with family forest and non-industrial forestlands in mind; SFI® was developed with private, industry-managed lands as a primary target audience; and FSC® was developed with a focus on affecting global forest sustainability. To identify the best fit and understand the differences, it is important for landowners, managers and forest products companies to evaluate the trade-offs of each in the context of their own operations, and opportunities to access existing and emerging markets.

THE FUTURE?

A great deal has changed since the early 1900s when the concept of sustainable forest management was first discussed. As our understanding of what sustainable forest management means grows and evolves, so does forest certification and the demand of society for goods and services from sustainably managed sources. Forest certification is one way that we can evaluate management practices and measure progress towards the goal of sustainable forest management.

FOREST MANAGEMENT GUIDELINES CHAPTERS



The mark of responsible forestry



2: Silvicultural Principles
 3: Wildlife Habitat
 4: Visual Quality
 5: Riparian Areas/Wetlands
 6: Cultural Resources
 7: Forest Soil Productivity
 8: Threats to Forest Health
 9: Economics
 10: Forest Management
 11: General Operations
 12: Forest Road Construction
 13: Timber Harvesting
 14: Pesticide Use
 15: Intermediate Silviculture
 16: Forest Roads
 17: Fire Management
 18: Forest Recreation

ATFS • STANDARDS	1. Commitment to Practicing Sustainable Forestry	x						x	x									
	2. Compliance with Laws												x					
	3. Reforestation and Afforestation	x										x		x				
	4. Air, Water, and Soil Protection				x	x	x				x	x						
	5. Fish, Wildlife, Biodiversity and Forest Health	x	x					x								x		
	6. Forest Aesthetics			x														
	7. Protect Special Sites	x	x			x			x							x		
	8. Forest Product Harvests and Other Activities									x			x					

FSC® • PRINCIPLES	1. Compliance with Laws and FSC® Principles				x			x										
	2. Tenure and Use Rights and Responsibilities									x								
	3. Indigenous Peoples' Rights					x												
	4. Community Relations and Worker's Rights	x				x							x					x
	5. Benefits from the Forest								x				x					x
	6. Environmental Impact	x	x	x	x	x	x	x		x	x	x	x	x	x			x
	7. Management Plan									x			x					x
	8. Monitoring and Assessment	x			x			x		x			x					
	9. Maintenance of High Conservation Value Forests	x								x			x				x	
	10. Plantation Management	x	x		x		x	x		x		x		x	x			x

Summary Table of ATFS Standards and FSC® Principles and their Relationship to Wisconsin Forest Management Guidelines Chapters



FOREST MANAGEMENT GUIDELINES CHAPTERS

	2: Silvicultural Principles	3: Wildlife Habitat	4: Visual Quality	5: Riparian Areas/Wetlands	6: Cultural Resources	7: Forest Soil Productivity	8: Threats to Forest Health	9: Economics	10: Forest Management	11: General Operations	12: Forest Road Construction	13: Timber Harvesting	14: Pesticide Use	15: Intermediate Silviculture	16: Forest Roads	17: Fire Management	18: Forest Recreation
SFI® • OBJECTIVES																	
1. Forest Management Planning									x								
2. Forest Health and Productivity	x					x	x				x	x	x	x		x	
3. Protection and Maintenance of Water Resources				x													
4. Conservation of Biological Diversity including Forests with Exceptional Conservation Value	x	x					x		x						x		
5. Management of Visual Quality and Recreational Benefits			x								x						x
6. Protection of Special Sites					x				x						x		
7. Efficient Use of Fiber Resources								x				x					
8. Recognize and Respect Indigenous Peoples' Rights									x								
9. Legal and Regulatory Compliance				x			x					x					
10. Forestry Research, Science and Technology				x			x										
11. Training and Education																	
12. Community Involvement and Landowner Outreach																	
13. Public Land Management Responsibilities																	
14. Communications and Public Reporting																	
15. Management Review and Continual Improvement																	

Summary Table of SFI® Objectives and their Relationship to Wisconsin Forest Management Guidelines Chapters

APPENDIX D: REGULATIONS RELATING TO FOREST MANAGEMENT

The list below contains state and federal regulations that relate to activities associated with forest management. Local laws and ordinances can be obtained from municipal offices. This is only a summary of laws and their provisions for your information. No warranty, expressed or implied, is made regarding the accuracy, adequacy, completeness, legality, reliability or usefulness of any information contained in this publication. To be certain of the accuracy of summaries, please consult the official language of the law that is listed.

Department employees shall not be held liable for any improper or incorrect use of the information contained in this publication. In no event shall the State of Wisconsin, the Department or Department employees be liable for any direct, indirect, incidental, special, exemplary, or consequential damages however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this publication. Other regulations may also apply.

WISCONSIN LAWS

WISCONSIN STATE STATUTES

Wisconsin State Statutes can be viewed at: www.legis.state.wi.us/rsb/stats.html.

Chapter 26, Wis. Stats. – Protection of Forest Lands and Forest Productivity

- **S. 26.03, Wis. Stats.** – Harvest of raw forest products. Requires that any person cutting a forest product from a private forest file a cutting notice with the county clerk prior to any harvesting.
- **S. 26.05, Wis. Stats.** – Timber theft. Elements of civil timber theft citation.
- **S. 26.06, Wis. Stats.** – Enforcement, seizure and sale of materials. Provides for seizure of forest products from state lands, FCL lands and MFL lands and penalties for transporting knowingly stolen timber.
- **S. 26.09, Wis. Stats.** – Civil liability for unauthorized cutting, removal or transportation of raw forest products.
- **S. 26.12 (6), Wis. Stats.** – Any slash which falls into or is deposited in a lake or stream, when harvesting

timber or other forest products, shall be immediately removed if, in the opinion of the department, such removal is in the public interest.

- **S. 26.205, Wis. Stats.** – Tractors, spark arresters. Provides for standards for tractors and similar equipment necessary to prevent forest fires.
- **S. 26.30, Wis. Stats.** – Forest insects and diseases; department jurisdiction; procedure. Provides for various authorities to the Wisconsin DNR for forest insect and disease controls and establishment of zones of infestation control.
- **S. 26.35, Wis. Stats.** – Forest productivity. Requires the Wisconsin DNR to identify privately owned forest lands that are most likely to provide high forest productivity benefits to the economy of the state and target assistance to such landowners.
- **26.38, Wis. Stats.** – Forest grant program. Requires the Wisconsin DNR to establish grant programs for sustainable forestry practices and for the control of invasive plants.

Chapter 28, Wis. Stats. – Public Forests

- **S. 28.05(1), Wis. Stats.** – Timber Sales; State Forests. Requires that cutting shall be limited to trees marked or designated for cutting by a forester.
- **S. 28.05 (3), Wis. Stats.** – Requires the Wisconsin DNR to establish a cooperating forester program.
- **S. 28.11, Wis. Stats.** – Administration of County Forests. Provides for the establishment of county forests. Requires the Wisconsin DNR to investigate and approve or deny entry of county forest lands. Requires that county forest land use plans be approved by the Wisconsin DNR. Authorizes the Wisconsin DNR to make grants for county forest administration and sustainable forestry. Provides information about the exchange of fees between the county and Wisconsin DNR. Provides procedures for withdrawal of county forest land.
- **S. 28.21, Wis. Stats.** – Municipal Forests. In a municipal forest registered with the Wisconsin DNR, no trees shall be cut except those marked or designated for cutting by a Wisconsin DNR forester.

Chapter 29, Wis. Stats. – Wild Animals and Plants

- **S. 29.601 (3), Wis. Stats.** – Prohibits throwing or depositing any deleterious substances, including oil, tar, refuse, debris, decayed wood, sawdust, and sawmill refuse, into waters of the state.
- **S. 29.604, Wis. Stats.** – Endangered and threatened species protected. Establishes regulations for endangered and threatened wild animals and plants. Exempts forestry practices from regulations regarding endangered and threatened wild plants.

Chapter 30, Wis. Stats. – Navigable Waters, Harbors and Navigation

- **S. 30.12, Wis. Stats.** – Structures and deposits in natural waters. Requires permits to deposit material and place structures on the bed of navigable waterways.
- **S. 30.123, Wis. Stats.** – Bridges and culverts. Requires permits for the construction of bridges and culverts over navigable waterways.
- **S. 30.18, Wis. Stats.** – Withdrawal of water from lakes and streams. Requires permits and establishes standards for diverting water from lakes and streams.
- **S. 30.19 (1g) (c), Wis. Stats.** – Requires permits for grading or removing more than 10,000 square feet of topsoil from the banks of navigable waterways.
- **S. 30.195, Wis. Stats.** – Changing of stream courses. Requires permits for changing the course or straightening navigable streams.
- **S. 30.20, Wis. Stats.** – Removal of Material from Beds of Navigable Waters. This section regulates the removal of material from the beds of navigable lakes, and both navigable and non-navigable streams.
- **S. 30.26, Stats.** – Wild Rivers. This section designates certain rivers as wild rivers, thereby preserving them in a free flowing condition, and protecting them from development. It also directs the Wisconsin DNR to provide active leadership in the development of a practical management policy and to work with local governments, U.S. Forest Service, timber companies, county foresters, and private landowners in implementing land use practices to accomplish these management objectives.

- **S. 30.27, Wis. Stats.** – Lower St. Croix River preservation. Identifies the Lower St. Croix River from the dam near St. Croix Falls to its confluence with the Mississippi River as a river to include in the National Wild and Scenic Rivers Program and directs the department to establish zoning standards.
- **S. 30.29, Wis. Stats.** – Operation of motor vehicles in water prohibited. Prohibits the operation of motor vehicles in any navigable waters, except in limited circumstances including for agricultural uses (including forest management), when the water is frozen, for activities for which a permit is issued, and for department activities.
- **Ss. 30.40-30.49, Wis. Stats.** – Establishes the Lower Wisconsin State Riverway.

Chapter 59, Wis. Stats. – Counties

- **S. 59.69 (4) (a), Wis. Stats.** – A county may not enact an ordinance which prohibits a forestry operation that is carried out in accordance with generally accepted forestry management practices as defined in s. 823.075, Wis. Stats. See Chapter 823, Wis. Stats., and Chapter NR 1, Wis. Admin. Code, for more information.

Chapter 60, Wis. Stats. – Towns

- **S. 60.61 (2) (a) 1., Wis. Stats.** – A town may not enact an ordinance which prohibits a forestry operation that is carried out in accordance with generally accepted forestry management practices as defined in s. 823.075, Wis. Stats. See Chapter 823, Wis. Stats., and Chapter NR 1, Wis. Admin. Code, for more information.

Chapter 61, Wis. Stats. – Villages

- **S. 61.35, Wis. Stats.** – A village may not enact an ordinance or adopt a regulation which prohibits a forestry operation that is carried out in accordance with generally accepted forestry management practices as defined in s. 823.075, Wis. Stats. See Chapter 823, Wis. Stats., and Chapter NR 1, Wis. Admin. Code, for more information.

Chapter 62, Wis. Stats. – Cities

- **S. 62.23 (7) (b), Wis. Stats.** – A city may not enact an ordinance or adopt a regulation which prohibits a forestry operation that is carried out in accordance with generally accepted forestry management practices as defined in s. 823.075, Wis. Stats. See Chapter 823, Wis. Stats., and Chapter NR 1, Wis. Admin. Code, for more information.

Chapter 77, Wis. Stats. – Taxation of Forest Croplands/Managed Forest Land

- **Chapter 77, Subchapter I, Wis. Stats.** – Taxation of forest croplands. Provides for sound forest management of private forests through production of forest products with public hunting and fishing as extra public benefits, through deferred taxation and just tax revenue to the towns.
- **Chapter 77, Subchapter VI, Wis. Stats.** – Managed forest land. Successor to the Forest Crop Law. Provides for the management through sound forestry practices of private forests for the production of future forest crops for commercial use, recognizing the objectives of individual property owners, compatible recreational uses, watershed protection, development of wildlife habitat and accessibility of private property to the public for recreational purposes.

Chapter 94, Wis. Stats. – Plant Industry

- **Ss. 94.67-94.715, Wis. Stats.** – Addresses the sale, handling and use of pesticides.

Chapter 157, Wis. Stats. – Disposition of Human Remains

- **S. 157.70, Wis. Stats.** – Burial sites preservation. Establishes the regulations related to the preservation of burial sites.

Chapter 160, Wis. Stats. – Groundwater Protection Standards

Establishes protection standards for groundwater to regulate pesticides and other polluting substances in groundwater.

Chapter 281, Wis. Stats. – Water and Sewage

- **S. 281.20, Wis. Stats.** – Orders; nonpoint source pollution. Authorizes the department to order the abatement of nonpoint source pollution.

Chapter 287, Wis. Stats. – Solid Waste Reduction, Recovery and Recycling

- **S. 287.07, Wis. Stats.** – Prohibitions on land disposal and incineration. Establishes standards for proper disposal of lead acid batteries, waste oil, tires and other materials.

Chapter 292, Wis. Stats. – Remedial Action

- **S. 292.11, Wis. Stats.** – Hazardous substance spills. Requires notification of state and local authorities of spills of hazardous substances.

Chapter 323, Wis. Stats. – Emergency Management

- **S. 323.60, Wis. Stats.** – Hazardous substance information and emergency planning. Establishes the authorities of the division of emergency management on hazardous spills and how other units of government respond.

Chapter 343, Wis. Stats. – Operators' Licenses

Regulates commercial drivers licenses for persons driving commercial motor vehicles, defined under 340.01(8), Wis. Stats., used for commercial transport of bulk pesticides (hazardous materials) and forest products. A copy of the CDL manual is available from:

Wisconsin Department of Transportation
Division of Motor Vehicles, Bureau of Driver Services
P.O. Box 7917, Madison, WI 53707-7917

Phone: 608-266-2237

Wisconsin CDL Hotline: 800-242-2514

Chapters 348 and 349, Wis. Stats. – Vehicles: Size, Weight and Load

- **Ss. 348.17, 349.15 and 349.16, Wis. Stats.** – Special or Seasonal Weight Limitations. No person shall operate a vehicle in violation of special weight limitations imposed by state or local authorities on particular highways, highway structures, or portions of highways when signs have been erected giving notice of such weight limitations.

Chapter 823, Wis. Stats. – Nuisances

- **S. 823.075, Wis. Stats.** – Actions against forestry operations. A forestry operation is not a nuisance if the forestry operation alleged to be a nuisance conforms to generally accepted forestry management practices. See s. NR 1.25 Wis. Admin. Code – Generally accepted forestry management practices.

WISCONSIN ADMINISTRATIVE CODE

Wisconsin Administrative Codes can be viewed at:
www.legis.state.wi.us/rsb/code.htm.

Copies of the above laws and rules are available from:

Wisconsin Department of Administration Document Sales Unit

P.O. Box 7840, Madison, WI 53707-7840

Phone: 608-266-3358

Chapter ATPC 29, Wis. Admin. Code – Pesticide Use and Control

Provides standards for use, storage, sale, and commercial application of pesticides.

Chapter ATPC 30, Wis. Admin. Code – Pesticide Product Restrictions

Provides standards for use, storage, sale, and commercial application of pesticides.

Chapter ATPC 31, Wis. Admin. Code – Groundwater Regulatory Rule

Provides standards for use, storage, sale, and commercial application of pesticides.

Chapter ATPC 33, Wis. Admin. Code – Pesticide Bulk Storage

Provides standards for use, storage, sale, and commercial application of pesticides.

Chapter NR 1, Wis. Admin. Code – Natural Resources Board Policies

- **Ss. NR 1.21-1.213, Wis. Admin. Code** – Private forestry assistance, cooperative forestry policy, private forestry priorities for assistance, cooperating forester program. These rules address the administration of the private forestry assistance program to private, non-industrial landowners under ss. 26.35, 28.01 and 28.01, Wis. Stats., and establish priorities for servicing private forestry requests and a cooperative program with consulting foresters.

- **S. NR 1.24, Wis. Admin. Code** – Management of state and county forests. Establishes the Natural Resources Board’s broad management objectives for the management of state and county forests.
- **S. NR 1.25, Wis. Admin. Code** – Generally accepted forestry management practices. Defines “generally accepted forestry management practices” to be forestry management practices that promote the sound management of a forest and includes those practices contained in the most recent version of the department publication known as *Wisconsin Forest Management Guidelines* (PUB-FR-226). Defines “sound management of a forest” to mean sustainably managing a forest with the application of ecological, physical, quantitative, managerial, economic, and social principles to the regeneration, management, utilization, protection and conservation of forest ecosystems to meet specified wildlife habitat, watershed, aesthetics, cultural and biological goals and objectives while maintaining the productivity of the forest.
- **S. NR 1.26, Wis. Admin. Code** – Contracting with cooperating foresters for timber sale establishment. Establishes the criteria and requirements for contracting with cooperating foresters on state timber sales.

Chapter NR 27, Wis. Admin. Code – Endangered and Threatened Species

Contains standards for the take, transportation, possession, or sale of any wild animal or wild plant on the department’s lists of endangered and threatened wild animals and wild plants.

Chapter NR 37, Wis. Admin. Code – Lower Wisconsin State Riverway Aesthetic Management Specifications for Cutting and Harvest of Timber

Establishes management specifications for timber harvesting in Lower Wisconsin State Riverway.

Chapter NR 40, Wis. Admin. Code – Invasive Species Identification, Classification and Control

- Creates a comprehensive, science-based system with criteria to classify invasive species into two categories: “Prohibited” and “Restricted.”
- With certain exceptions, the transport, possession, transfer and introduction of Prohibited species is banned.
- Restricted species are also subject to a ban on transport, transfer and introduction, but possession is allowed, with certain exceptions.

The Wisconsin DNR may issue permits for research or public display of any listed invasive species. For species other than invasive fish and crayfish, permits may also be issued for any other purpose.

Chapter NR 46, Wis. Admin. Code – Forest Tax Program

Establishes rules and regulations for the Forest Crop Land program and the Managed Forest Land program.

Chapter NR 47, Wis. Admin. Code – Forestry Grant and State Aid Administration

Provides for the implementation and administration of grants and state aid programs pertaining to forestry and forest resources in the state including Wisconsin’s Forest Landowner Grant Program.

Chapter NR 80, Wis. Admin. Code – Use of Pesticides on Land and Water Areas of the State of Wisconsin

Establishes regulations for the application of pesticides to land and waters of Wisconsin.

Chapter NR 103, Wis. Admin. Code – Water Quality Standards for Wetlands

Provides wetland water quality standards and procedures for permitting activities within wetlands.

Chapter NR 107, Wis. Admin. Code – Aquatic Plant Management

Establishes procedures for the management of aquatic plants and control of other aquatic organisms.

Chapter NR 115, Wis. Admin. Code – Wisconsin’s Shoreland Management Program

Contains the statewide minimum standards for county shoreland zoning ordinances, including the management of shoreland vegetation.

Chapter NR 116, Wis. Admin. Code – Wisconsin’s Floodplain Management Program

Establishes standards for floodplain zoning ordinances.

Chapter NR 117, Wis. Admin. Code – Wisconsin’s City and Village Shoreland-Wetland Protection Program

Requires cities and villages to adopt shoreland-wetland zoning ordinances, including provisions regarding silvicultural activities. Provisions for counties are found in Chapter NR 115, Wis. Admin. Code.

Chapter NR 118, Wis. Admin. Code – Standards for the Lower St. Croix National Scenic Riverway

Contains standards for municipal zoning ordinances on the Lower St. Croix River to maintain its scenic characteristics.

Chapter NR 151, Wis. Admin. Code – Runoff Management

Establishes runoff performance standards and practices designed to achieve water quality standards.

Chapter NR 216, Wis. Admin. Code – Storm Water Discharge Permits

Provides criteria for activities requiring storm water permits.

Chapter NR 302, Wis. Admin. Code – Management of Wisconsin’s Wild Rivers

Provides standards for the management of state-designated wild rivers, including timber harvesting standards.

Chapter NR 320, Wis. Admin. Code – Bridges and Culverts In or Over Navigable Waterways

Establishes permitting standards for bridges and culverts.

Chapter NR 706, Wis. Admin. Code – Hazardous Substance Discharge Notification and Source Confirmation Requirements

Requires the hazardous spills be reported to the department and that actions be taken to contain, clean-up, and properly dispose of the hazardous substance.

FEDERAL LAWS

The United States Code (U.S.C.) Code of Federal Regulations (CFR) can be viewed at:

- (U.S.C.) www.gpoaccess.gov/uscode/
- (CFR) <http://ecfr.gpoaccess.gov/>

Copies of Federal Acts (Either complete CFR Volumes or single copies of daily Federal Registers) can be purchased from:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
Phone: 202-512-1800

Complete CFR Volumes also can be acquired from:

U.S. Government Bookstore
Suite 150, Reuss Federal Plaza
310 West Wisconsin Avenue, Milwaukee, WI 53203
Phone: 414-297-1304

Bald Eagle Protection Act, 16 U.S.C., Section 668
Establishes regulations protecting Bald Eagles, including restrictions on disturbing nesting activity.

Clean Water Act (CWA), 33 U.S.C., Sections 1251-1376
Establishes standards for permitting wetland alterations, including an exemption for normal silvicultural activities, including forest roads if certain design, location and use standards are satisfied.

Commercial Driver's License (CDL) Standards CFR, Title 49, Part 383

Comprehensive Environmental Response Compensation and Liability Act (CERCLA), CFR, Title 40, Parts 300-302
For information on CERCLA, call **800-424-9346**.

Endangered Species Act (ESA), 7 U.S.C. Section 136, 16 U.S.C. Section 1531

Establishes regulations for federal endangered and threatened wild animals and plants.

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), CFR, Title 40, Parts 152-186

For information on FIFRA, call **703-305-5805**.

Hazard Communication Standard (HCS), CFR, Title 29, part 1910.1200

For information on HCS, call OSHA's regional office at: **312-353-2220**.

Hazardous Materials Transportation and Training, CFR, Title 49, parts 171-177

For information on hazardous material transportation or training requirements, call **202-366-6121**.

Lacey Act, 16 U.S.C., Sections 3371-3378

Regulates the illegal transport of animals and timber across state and international borders.

Migratory Bird Treaty Act (MBTA), CFR, Title 16, Parts 703-712

Establishes protections for migratory birds, including protections for harvesting during nesting seasons.

Resource Conservation and Recovery Act (RCRA), CFR, Title 40, Parts 260-281

For information on RCRA, call **800-424-9346**.

Superfund Amendments and Reauthorization Act (SARA), CFR, Title 40, Parts 300-374

For information on SARA, call **800-424-9346**.

Workers Protection Standard (WPS) for Agricultural Pesticides, CFR, Title 40, Part 170

For information on WPS, call **703-305-7666**.

APPENDIX E: PERMITS

In addition to the BMPs described in this manual, you should be aware of existing municipal, county, state, and federal regulations relating to forest management and water quality. Many of these regulations are listed in Appendix D: Regulations Relating to Forest Management. Appendix E: Permits summarizes several permits and notices related to the regulations in Appendix D: Regulations Relating to Forest Management. This list should not be construed as complete. For more information, contact your county zoning office or Wisconsin DNR water management specialist when conducting forest management activities near streams, lakes or wetlands. If you are planning an activity near a waterbody or wetland, investigate the need for a permit at least 90 DAYS in advance of the activity.

Legal definitions of a lake, stream, navigability, and ordinary high water mark are listed in Chapter 5: Riparian Areas and Wetlands and in Appendix H: Glossary.

LOCAL PERMITS AND NOTICES

These permits and notices may be required by town, village, city, or county regulations.

BURNING PERMITS

Contact your local fire department, town chairperson, or local municipal official if you have any questions. Local ordinances may be more restrictive than state law.

COUNTY CUTTING NOTICES

Under state law, anyone harvesting timber (except for firewood, boughs or up to five Christmas trees) is required to file a cutting notice with the county clerk at least 14 days before beginning a timber harvest.

FLOODPLAIN ZONING PERMITS

When working in a mapped floodplain, permits may be required for activities including installation of stream crossings and placement of wetland fill (such as for

an approach to a stream crossing). The goal of these regulations is to prevent increases in flood elevations. Contact your local county zoning administrator regarding floodplain zoning permits.

SHORELAND AND SHORELAND-WETLAND ZONING PERMITS

Permits may be required by shoreland-wetland or shoreland zoning ordinances for harvesting timber near the water, grading, placing fill in wetlands and other activities. Regulations vary by municipality. Special provisions exist on the Lower Wisconsin Riverway and the St. Croix River. The Lower Wisconsin Riverway extends from the dam at Prairie du Sac south to the Mississippi River. Information on the Lower Wisconsin Riverway is available at: lwr.state.wi.us or by calling **608-739-3188**. Standards along the St. Croix River are available from municipal offices.

WATERWAY AND WETLAND PERMITS

Wisconsin DNR waterway and wetland permits are required for activities that affect lakes, streams and wetlands. Common activities that occur during forest management that may require a permit include:

- Stream crossings of navigable waterways including bridges, culverts, fords, timber mats, and pole fords.
- Wetland crossings that do not meet the silvicultural exemption.

For more information, contact your local Wisconsin DNR water management specialist or go to: dnr.wi.gov – keyword “waterway.”

STATE PERMITS AND NOTICES

BURNING PERMITS

Burning permits are required by the Wisconsin DNR in many parts of the state to conduct legal and responsible burning in the outdoors. Burning permits are free and easy to obtain. They encourage the public to burn safely and are proven to be effective in protecting lives, property and natural resources from the damages of wildfires. These no-cost permits are good for the calendar year and are non-transferable. More information is available at: dnr.wi.gov – **keywords “burn permit.”**

INCIDENTAL TAKE PERMITS/AUTHORIZATION

According to s. 29.604, Wis. Stats. it is illegal to take, transport, possess, process, or sell any wild animal that is included on the Wisconsin Endangered and Threatened Species List. In addition, it is illegal to remove, transport, carry away, cut, root up, sever, injure, or destroy a wild plant on the Wisconsin Endangered and Threatened Species List on public lands. Forestry, agricultural and utility practices are exempted from the taking prohibitions of listed plant species.

The Wisconsin Endangered Species law allows the Department to authorize the taking of a protected species if the taking is not for the purpose of, but will be only incidental to, the carrying out of an otherwise lawful activity. To date, the Department has not issued an Incidental Take Permit for routine forest management activities. In most cases, take can be avoided through timing or other modifications. Contact the Bureau of Natural Heritage Conservation or visit dnr.wi.gov – **keyword “ER”** for information on Incidental Take Permits.

STORM WATER PERMITS

Wisconsin DNR storm water permits are required when disturbing one or more acres of land, such as during the construction, reconstruction or maintenance of roads. Storm water permits are not required for forest roads that are used solely for silvicultural purposes, if certain standards are met. For multi-use roads, a storm water permit is needed when the construction of a new road or reconstruction of an existing road will disturb one or more acres of land or when maintenance of an existing road will disturb five or more acres. Contact your local Wisconsin DNR storm water specialist or refer to dnr.wi.gov – **keywords “storm water”** for more information about the Wisconsin DNR’s Storm Water Program.

CUTTING NOTICES AND REPORTS

Landowners that are enrolled in the Managed Forest Law (MFL) Program or the Forest Crop Law (FCL) Program must file a cutting notice (part A of Form 2450-032) with the Wisconsin DNR at least 30 days before harvesting begins (except for cutting firewood for personal use). Within 30 days of the completion of the harvest, a report (Part B of Form 2450-032) with cutting volumes must be filed with the Wisconsin DNR. For more information, contact your local Wisconsin DNR forester or refer to: dnr.wi.gov – **keywords “forest tax.”**

FEDERAL PERMITS

WATERWAY AND WETLAND PERMITS

The U.S. Army Corps of Engineers (USACE) regulates activities occurring in waterways and wetlands, including the excavation and placement of fill. When building a road or trail through a wetland, a permit may be required from the USACE. An exemption for forest roads is available, but certain design, location and use standards must be met to qualify for the exemption. Contact your local USACE program staff or visit the USACE website at: www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.

APPENDIX F: CITED REFERENCES

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Wisconsin's Forestry Best Management Practices for Water Quality. Wisconsin Department of Natural Resources, Publication Number FR093, Wisconsin Department of Natural Resources, 2010.

APPENDIX G: RESOURCE DIRECTORY

FOREST MANAGEMENT ASSISTANCE AND EDUCATION

The Resource Directory identifies sources of information and assistance in the management of forest resources. A number of organizations and agencies are listed, along with a brief description of

the types of assistance they can provide, and contact information. This directory is not exhaustive. Additional resources related to specific management activities can also be found at the end of each chapter.

Wisconsin Department of Natural Resources

FORESTERS EMPLOYED BY THE STATE OF WISCONSIN WHO ASSIST PRIVATE LANDOWNERS

Wisconsin DNR service foresters are stationed in every county. They focus on initial guidance and management planning to get landowners started with sustainable forestry. Wisconsin DNR foresters can also help get information for landowners from forest health specialists, wildlife biologists, and other resource managers at the Wisconsin DNR.

Wisconsin DNR tax law specialists are also stationed in every county to assist private landowners with all aspects of the forest tax law programs (Managed Forest Law [MFL] and Forest Crop Law [FCL]). More information on tax law programs can be found later on in this appendix.

PRIVATE ENTERPRISE FORESTERS (CONSULTING AND INDUSTRIAL FORESTERS) THAT HAVE SIGNED A COOPERATING FORESTER AGREEMENT WITH THE DEPARTMENT

Cooperating foresters voluntarily agree to observe Wisconsin DNR standards and rules whenever they assist with land management planning and timber harvesting. Cooperating foresters also agree to attend continuing education courses to stay current in the services they offer. Consulting foresters serve or represent private landowners on a contract or fee basis, which the landowner pays.

Industrial foresters are employed by wood-using industries that provide advice and assistance to private landowners to promote forestry practices approved by the companies.

You can search for a Wisconsin DNR or cooperating forester that services your county using the Forestry Assistance Locator or by using the most recent version of the directory of foresters. You can find both on the Wisconsin DNR website at: ***dnr.wi.gov – keywords “forester.”***

Copies of the *Directory of Foresters* are also available from Wisconsin DNR Service Centers and Ranger Stations. You can also request one in writing or over the phone.

Wisconsin Department of Natural Resources
Division of Forestry
PO Box 7921, Madison, WI 53707
Phone: 608-267-7495

The *Silviculture Handbook*, 2431.5, can also be found on the Wisconsin DNR website at: ***dnr.wi.gov – keyword “silviculture.”***



University of Wisconsin-Extension (UWEX)

Through county-based faculty, basin educators, and statewide extension specialists, UWEX offers a variety of research-based educational programs and opportunities including agriculture, forestry, wildlife, fisheries, family living, 4-H, and more.

For woodland owners and others interested in forestry, wildlife and related natural resource topics, UWEX works with many partners to provide education resources for:

- Forestry and wildlife fact sheets and publications
- Woodland owner workshops and conferences
- In-depth forestry and wildlife learning experiences through COVERTS, Master Woodland Stewards, and the Woodland Leaders Institute

- Continuing education for resource professionals
- Assistance to the forest products industry

The UWEX Caring for your Woodland website (woodlandinfo.org) has information on how to plan a visit to your local UWEX County Office, Extension publications, introductions to forest management, or information on land ownership.

For more information on programs available through UWEX, visit your local UWEX County Office or their website at: counties.uwex.edu.

UWEX Regional Natural Resources Program

The University of Wisconsin's Regional Natural Resources Program includes a team of Natural Resources Educators located across the state. For more information visit: naturalresources.uwex.edu.

Natural Resource Educators

UWEX Regional Natural Resources Program includes a team of Natural Resource Educators located across the state. The educators provide local and statewide education, training, and technical support for environmental and natural resource issues. To find an educator in your area, visit their website at: naturalresources.uwex.edu/staff/index.html.



University of Wisconsin-Stevens Point (UWSP)

The College of Natural Resources, in collaboration with UWSP Continuing Education and Outreach, offers a variety of hands-on, immersion training programs in forestry and forest management. Topics covered in these trainings include but are not limited to:

- Northern Hardwood Forest Marking
- Log Quality, Visual Merchandizing, Internal Rate of Return, and Milling
- Tree Biology
- Plant Identification and Sampling

All of our trainings are pre-approved for Society of American Foresters and Wisconsin DNR cooperating foresters Continuing Education Units (CEUs). More information on our current programs can be found at: www.uwsp.edu/conted/Pages/enhanceSkills.aspx.

The University of Wisconsin-Stevens Point offers customized in-person and online programming on a variety of professional and business development topics. More information on our customizable trainings can be found at: www.uwsp.edu/conted/Pages/Forestry-Customized-Training.aspx.



Haley Frater

CNR Outreach Program Manager • College of Natural Resources • Stevens Point, WI 54481-3897
Phone: 715-346-4176 • **Email:** haley.frater@uwsp.edu

University of Wisconsin-Madison

UWEX Cooperative Extension is a partnership of Wisconsin counties, the University of Wisconsin, and the U.S. Department of Agriculture to extend research-based knowledge to people where they live and work. UWEX provides equal opportunities and programming including Title IX requirements.



Department of Forest and Wildlife Ecology • 1630 Linden Drive, Madison, WI 53706
Phone: 608-262-9975 • **Fax:** 608-262-9922 • forestandwildlifeecology.wisc.edu

United States Department of Agriculture (USDA)

FOREST SERVICE NORTHEAST AREA

The U.S. Forest Service provides technical assistance through its State and Private Forestry Northeast Area (NA) Office. The NA website offers a vast selection of forestry publications from organizations around the country. • www.na.fs.fed.us/pubs

It includes links to publications for the following:

- riparian forest management
- wildlife/hunting
- tree identification
- seedling suppliers
- forest health and protection
- tree planting
- special forest products
- timber sales
- glossaries of forestry terms
- recreation
- income tax and estate planning
- silviculture
- and much, much more!

FARM SERVICE AGENCY (FSA)

www.fsa.usda.gov

FSA is the USDA agency into which were merged several predecessor agencies, including the Agricultural Stabilization and Conservation Service (ASCS). FSA is primarily tasked with the implementation of farm conservation and regulation laws around the country. The FSA of each state is led by a politically appointed State Executive Director (SED).

NATURAL RESOURCES CONSERVATION SERVICE (NRCS)

The NRCS, formerly known as the Soil Conservation Service (SCS), is an agency of the USDA that provides technical assistance to farmers and other private landowners and managers.

www.nrcs.usda.gov

FOREST INDUSTRY SAFETY TRAINING ALLIANCE (FISTA)

FISTA provides training programs on logging and other forestry activities for forestry professionals, woodland owners, special interest groups, municipalities, and others. The content of the classes is based off the national Sustainable Forestry Initiative (SFI®) standard.

Jennie Baker (FISTA Office Coordinator)

FISTA

3243 Golf Course Road

Rhineland, WI 54501

Phone: 1-800-551-2656

Email: jennie.baker@fistausa.org

fistausa.org

GATHERING WATERS

Gathering Waters is a land conservation organization formed in 1994 to assist land trusts, landowners and communities in their efforts to protect Wisconsin's land and water resources. Established by a coalition of land trusts, Gathering Waters serves as an education and technical assistance center for both land trusts and landowners. But their mission goes far beyond training and providing expert advice on land conservation issues. Gathering Waters works directly with concerned landowners and existing land trusts statewide to preserve Wisconsin's natural heritage and rural landscape.

Gathering Waters

211 South Paterson Street, Suite 270

Madison, WI 53703

Phone: 608-251-9131 • www.gatheringwaters.org

Wisconsin Woodland Owners Association (WWOA)

The Wisconsin Woodland Owners Association (WWOA) is a nonprofit [501(c)(3)], educational membership association for the private woodland owners of Wisconsin. WWOA offers year-round educational opportunities for novice and experienced private woodland owners who want to become better stewards of their woodlands. If you are passionate about caring for your woodlands, join WWOA to learn from soon to be friends near and far about how they care for their land. We learn as much from each other as we do from natural resource professionals.



WWOA's website found at: wisconsinwoodlands.org provides a calendar of events, timely news, a wealth of resources and links.

Like our Facebook page at: www.facebook.com/WisconsinWoodlands/ to keep informed about news and activities. WWOA publishes a quarterly award-winning magazine, *Wisconsin Woodlands*, that members receive as a benefit of membership. We sponsor local field days, workshops, regional conferences, and our wonderful annual meeting each year in September. Local WWOA chapters are a great way to learn more about local issues and visit neighboring woodland properties. WWOA also offers the Women of WWOA gatherings twice a year, Growing Your Legacy information, a co-sponsored newsletter with the Wisconsin Tree Farm Committee, a Forestry Leader Scholarship at UW-Stevens Point for future foresters, and a variety of volunteer opportunities. For a free information packet with a sample of our magazine, contact:

Wisconsin Woodland Owners Association
PO Box 285, Stevens Point, WI 54481
Phone: 715-346-4798 • **Email:** wwoa@uwsp.edu
www.wisconsinwoodlands.org

American Tree Farm System® (ATFS)

The ATFS is a nationwide program encouraging private forest owners to do an effective job of growing trees as a crop. You may have seen a green and white ATFS sign on your travels around Wisconsin. ATFS is sponsored by professional foresters working for government agencies, industry and as consulting foresters. ATFS inspectors must meet minimum education and experience requirements.

If interested in becoming an ATFS tree farmer, contact the Wisconsin Tree Farm Committee or your local Wisconsin DNR forester. They will arrange to have a state, private or industrial forester look at your property to prepare a tree farm management plan. Once certified as an ATFS tree farm, you can

display the sign and subscribe to the *American Tree Farmer* magazine. You will receive notices of field days, conferences, conventions, and study tours on forestry. Certified ATFS tree farm landowners are also eligible to compete in annual Outstanding Tree Farmer competitions. For information on tree farming in Wisconsin, contact:

Wisconsin Tree Farm Administrator
PO Box 285,
Stevens Point, WI 54481
Phone: 715-252-2001
Email: witreefarm@gmail.com
witreefarm.org



CULTURAL RESOURCE ASSISTANCE

ARCHAEOLOGICAL CONSULTANTS

The state historic preservation office maintains lists of archaeological consultants to help the public to locate an archaeologist to fit their needs.

www.wisconsinhistory.org/records/article/cs2835

BURIAL SITES PRESERVATION

Wisconsin Historical Society

Burial Sites

816 State Street, Madison, WI 53706

Phone: 808-342-7834 or 608-264-6507

DEPARTMENTAL ARCHAEOLOGIST, DNR

2300 North Dr. Martin Luther King Jr. Drive

Milwaukee, WI 53212

Phone: 414-263-8617

HISTORIC STRUCTURES

Wisconsin Historical Society

Historic Preservation

816 State Street, Madison, WI 53706

Phone: 608-264-6512

STATE ARCHAEOLOGIST

Wisconsin Historical Society

816 State Street, Madison, WI 53706

Phone: 608-264-6496

TRIBAL HISTORIC PRESERVATION OFFICERS

www.wisconsinhistory.org/Records/Article/CS3145

WISCONSIN ARCHITECTURE AND HISTORY INVENTORY

The Wisconsin Historical Society website allows you to search the National and State Register of Historic Places.

www.wisconsinhistory.org/ahi

NON-TIMBER PRODUCTS

Aromatics, berries and wild fruits, cones and seeds, forest botanicals, honey, mushrooms, nuts, syrup, and weaving and dyeing materials are some of the many alternative forest products that people grow and harvest. Special products like these can provide opportunities for entrepreneurs to supplement their incomes. The broader economic framework that results can ultimately help to preserve and protect sustainable forests.

For more information, see *Non-timber Products in the United States, 2002*, edited by E. T. Jones, R. J. McLain and J. Weigand. University Press of Kansas.

kansaspress.ku.edu/978-0-7006-1166-9.html

The following website lists additional books, articles and publications, many of which can be downloaded. Both rural and urban forests are addressed.

www.forestandwoodland.org/non-timber-forest-products.html

Wisconsin Walnut Council

The Wisconsin Walnut Council is a state chapter affiliate of a nationwide organization involved with hardwood management. The council conducts periodic field trips, and is a source of information on growing all types of hardwood trees.

www.wiscwalnutcouncil.org/indexwisc.html

SOURCES OF MAPS AND PLANNING TOOLS

Aerial Photography

DEPARTMENT OF NATURAL RESOURCES (DNR)

The Wisconsin DNR coordinates an aerial photography project for forestry planning. Flights are repeated at least once every ten years for each county. High-resolution prints and enlargements are available for purchase.

Information for ordering prints and enlargements for each county can be found on the DNR website.

dnr.wi.gov – keywords “aerial photography”

USDA

Landowners working with the Farm Service Agency (FSA) on farm programs have access to aerial

photographs maintained by the USDA. Contact your local FSA Office for details.

www.fsa.usda.gov/programs-and-services/aerial-photography/index

TERRASERVER AERIAL PHOTOS

Visit the TerraServer-USA website which provides free public access to a vast data store of aerial photographs and topographic maps of the United States. The TerraServer website is easy to navigate by selecting a location on a map or entering the name of a place, and is designed to work with common computer systems and web browsers over slow speed communications links.

www.terraserver.com

Other Digital Mapping Resources

The Wisconsin Land Information Clearinghouse is an internet gateway to geospatial data, land and reference information, and the Wisconsin agencies that produce or maintain these items.

www.sco.wisc.edu/wisclinc

Links are provided for the following themes:

- Internet map services (online maps built in a web browser)
- Political and administrative boundaries
- Image and base maps
- TIGER and line data (maps from the U.S. Census Bureau)
- Water and hydrography
- Infrastructure
- Natural resources and environment
- Soils and geology

Two federal mapping resources link users to extensive libraries of mapping data from agencies around the country:

- The **U.S. Geological Survey (USGS)** is responsible for building, maintaining and applying The National Map. It provides public access to high-quality geospatial data and information from multiple partners. You can view The National Map by using your web browser (no special software or download required).

nationalmap.gov

- The U.S. government maintains a web-based portal for one-stop access to maps, data and other geospatial services. The website helps to simplify information so everyone can easily find geospatial data, as well as learn more about geospatial projects underway.

www.data.gov

Topographic Maps

U.S. GEOLOGICAL SURVEY

The United States Geological Survey (USGS) provides science for a changing world by delivering reliable and impartial information that describes the Earth, its natural processes, and its natural species. This information is used to manage water, biological, energy, and mineral resources, and to enhance and protect our quality of life. The USGS works with every state in the country, cooperating with more than 2,000 organizations to provide information for resource managers in the public and private sectors.

Phone: 1-800-USA-MAPS • store.usgs.gov/maps

LOCAL LIBRARIES

Check with your local library for the availability of maps.

WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY (WGNHS)

The WGNHS, a part of the University of Wisconsin Extension, is an interdisciplinary organization that conducts natural resources surveys and research to produce information used for decision-making, problem-solving, planning, management, education, and development. For more information, contact:

Wisconsin Geological and Natural History Survey
3817 Mineral Point Road
Madison, WI 53705-5100

Map Sales: 608-263-7389

Information: 608-262-1705

www.uwex.edu/wgnhs

SOIL SURVEYS, SOIL INTERPRETATION, AND EROSION CONTROL

Wisconsin Natural Resources Conservation Service (NRCS)

Published soil survey reports for most Wisconsin counties are available through your local NRCS or county Land Conservation Department offices.

Soil survey reports include:

- Detailed soil maps on an aerial photo background
- Descriptions of the soils
- Soil use and management information
- Recreational development information
- Soil property and interpretation information in table format

More information about soil survey reports is available at: www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey.

Web Soil Survey Mapping Portal

websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Soils Lab Analysis

University of Wisconsin Soil and Plant Analysis Labs are located in Madison and Marshfield.

uwlabs.soils.wisc.edu

WISCONSIN WETLAND INVENTORY AND DIGITAL DATA

The Wisconsin Wetland Inventory was established in 1978 to help protect wetlands. The DNR was directed to map the state's wetlands and the initial inventory was completed in 1984. Wetland maps are available for the entire state. You can obtain map copies or learn more about the Wisconsin Wetland Inventory by visiting the DNR website at: dnr.wi.gov – keywords "wetland inventory."

DNR DIGITAL MAPPING RESOURCES

The Wisconsin DNR web mapping applications display various types of information in map format. A complete list of web mapping applications available can be found at the DNR website. dnr.wi.gov – keyword "maps"

Statewide and Landscape Level Tools

WISCONSIN WILDLIFE ACTION PLAN

Wisconsin Wildlife Action Plan (2006). Department of Natural Resources, Madison, Wisconsin. Wisconsin's Wildlife Action Plan (WWAP) identifies native animals that are in greatest need of conservation, along with the habitats (natural communities) and places (ecological landscapes) they use.

The plan is part of a nationwide effort to outline steps needed to conserve wildlife and habitat before they become more rare and costly to protect. The plan is available online with tools to quickly access information from the plan. These web pages provide lists of Species of Greatest Conservation Need (SGCN) by ecological landscape and natural community type, as well as the places in the state that offer the best opportunities to maintain these species and their habitats. These pages are closely integrated with other Wisconsin DNR web pages for ecological landscapes, natural communities, and rare species information.

dnr.wi.gov – keywords “wildlife action plan”

ECOLOGICAL LANDSCAPES OF WISCONSIN HANDBOOK

Wisconsin is comprised of 16 ecological landscapes, each with its own unique ecological characteristics and management opportunities. These landscapes have been used as a geographical framework for numerous Wisconsin planning efforts.

The *Ecological Landscapes of Wisconsin Handbook* is a comprehensive guide to all 16 ecological landscapes. The handbook is designed as a planning resource, highlighting important ecological considerations and providing information about each ecological landscape's physical environment, biology, and socio-economic resources. Management opportunities to sustain species, natural communities, and other ecologically important features in Wisconsin are suggested using a statewide, regional and continental perspective. In addition, the best locations in the State are identified at which to apply these management opportunities.

The handbook also includes extensive background information, summaries of important management opportunities, useful maps, and descriptions of Wisconsin's natural communities. For additional information, coordinate the handbook with the *Wisconsin Wildlife Action Plan* as well as other tools.
dnr.wi.gov – keyword “landscapes”

WISCONSIN ALL-BIRD CONSERVATION PLAN

The Wisconsin All-bird Conservation Plan synthesizes the requirements and conservation issues of 116 priority bird species, and provides recommendations for habitat protection, restoration, and management that will have the greatest impact on bird populations.

www.wisconsinbirds.org/plan/

WISCONSIN LAND LEGACY REPORT

Wisconsin Land Legacy Report: An inventory of places to meet Wisconsin's future conservation and recreation needs, Wisconsin DNR, Madison, WI, 2006. This report identifies places across the state believed to be most critical to meeting current and future conservation and recreation needs.

dnr.wi.gov – search “land legacy”

DRIFTLESS AREA INITIATIVE

Natural Resources Conservation Service (NRCS) uses the Environmental Quality Incentives Program (EQIP) to provide technical and financial assistance to help producers accelerate installation of conservation practices in the Driftless Area. The initiative focuses on restoring coldwater stream corridors. Common practices include protecting streambanks from erosion, adding fences to keep livestock out of streams, removing obstructions in the water, adding stream crossings and fish ladders, and managing habitat for wildlife. Information on the Driftless Area Landscape Conservation Initiative can be found at the NRCS website.

www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/initiatives

FINANCIAL INCENTIVE PROGRAMS

Wisconsin offers landowners two important categories of financial incentives to help reduce the expenses of owning and caring for woodlands:

- State forest tax laws that help reduce property taxes.
- Cost-sharing programs that are available from state and federal sources, which reimburse landowners for allowable conservation project expenses.

Cost-sharing Programs

The Wisconsin Forest Landowner Grant Program (WFLGP) provides financial assistance for stewardship practices on private land. A wide array of practices are eligible for cost-sharing including management plan development, tree planting, and forest improvement. Contact your local Wisconsin DNR forester for details. The Wisconsin DNR foresters also help landowners with the following federal cost-sharing programs offered by USDA:

- Conservation Reserve Program (CRP)
- Environmental Quality Incentives Program (EQIP)
- Conservation Stewardship Program (CSP)

Wisconsin Department of Natural Resources
Division of Forestry
PO Box 7921, Madison, WI 53707
Phone: 608-267-7508

More information is available from the Wisconsin DNR website at: dnr.wi.gov – **keyword “WFLGP.”**

FOREST TAX PROGRAMS

Statewide, more than three million acres are enrolled in a forest tax program. Wisconsin’s forest tax laws encourage sustainable forest management on private lands by providing a property tax incentive to landowners. Two different forest tax law programs currently exist: the Managed Forest Law (MFL) and the Forest Crop Law (FCL). The FCL program was enacted in 1927 and enrollment was closed on January 1, 1986. MFL was enacted in 1985 and is the only forest tax program that is open to enrollment.

Together with landowner objectives, MFL incorporates timber harvesting, wildlife management, water quality, and recreation to maintain a healthy and productive forest. Sustainable forest management benefits Wisconsin’s economy, hunting, fishing, wildlife, recreation, soils, waterways, and air quality, and renews our beautiful forests for everyone to enjoy.

To participate in the MFL program, landowners designate property as “Open” or “Closed” to public access for recreation, and commit to a 25- or 50-year sustainable forest management plan. The plan sets the schedule for specific forestry practices which landowners must complete. In return, MFL participants make a payment in lieu of regular property taxes. For more information, visit dnr.wi.gov – **keywords “MFL” or “forest tax.”**

The DNR manages a group certification program for non-industrial forestland enrolled in the MFL. MFL group certification focuses on Wisconsin DNR’s administration of the group and quality of management on member land. Third-party auditors determine if the MFL group conforms to American Tree Farm System® (ATFS) and Forest Stewardship Council® (FSC®) principles and performance measures. More information on MFL group certification can be found by visiting the Wisconsin DNR website. dnr.wi.gov – **keywords “MFL certified group”**

The FCL, now closed to enrollment, was an earlier forest tax incentive program. If you are buying forestland, you may come across FCL land. Contact your local Wisconsin DNR tax law specialist for details.

FISH AND WILDLIFE HABITAT, WETLAND PROTECTION

The Department of Natural Resources (DNR) and other agencies and organizations can help you manage and restore fish and wildlife habitat, and protect wetlands. Wisconsin DNR offices can also provide current listings of designated trout streams (and their tributaries) and designated trout lakes.

DNR WILDLIFE BIOLOGIST STATE-WIDE CONTACTS

To contact a DNR wildlife biologist visit dnr.wi.gov – keyword “**contact**” and select “**search for DNR staff.**” Once at the staff directory, enter “**wildlife biologist**” for the subject and select your county to find one that serves your area.

ARMY CORPS OF ENGINEERS

Regulation Branch, St. Paul District
190 Fifth Street East, Suite 700
St. Paul, MN 55101-1638
Phone: 651-290-5807
www.mvp.usace.army.mil

NATURAL RESOURCES CONSERVATION SERVICE

United States Department of Agriculture
Natural Resources Conservation Service
8030 Excelsior Drive, Suite 200
Madison, WI 53717
Phone: 608-662-4422
www.wi.nrcs.usda.gov

U.S. DEPARTMENT OF AGRICULTURE'S CONSERVATION RESERVE PROGRAM

USDA, Farm Service Agency
6515 Watts Road, Suite 100, Madison, WI 53719
Phone: 608-276-8732
www.nrcs.usda.gov/wps/portal/nrcs/main/wi/programs

U.S. FISH AND WILDLIFE SERVICE

Region 3: Great Lakes-Big Rivers
Federal Building
1 Federal Drive, Fort Snelling, MN 55111-4056
www.fws.gov/midwest

PARTNERS FOR FISH AND WILDLIFE

4511 Helgesen Drive
Madison, WI 53718-6747
Phone: 608-221-1206

WISCONSIN WATERFOWL ASSOCIATION

P.O. Box 427
Wales, WI 53183
Phone: 1-800-524-8460
www.wisducks.org

ENDANGERED, THREATENED OR SPECIAL CONCERN SPECIES

U.S. FISH AND WILDLIFE ENDANGERED SPECIES

Wisconsin Field Office
2661 Scott Tower Drive
Green Bay, WI 54229-9565
Phone: 920-866-1717
www.fws.gov/midwest/GreenBay/endangered/index.html
National: www.fws.gov/endangered

WISCONSIN DEPARTMENT OF NATURAL RESOURCES, BUREAU OF NATURAL HERITAGE

101 South Webster Street
Madison, WI 53707-7921
Phone: 608-266-7012
dnr.wi.gov – keyword “**NHC**”

FOREST HEALTH PROTECTION

Contact a Wisconsin DNR forest health specialist.

FOREST HEALTH SPECIALISTS

To contact a Wisconsin DNR forest health specialist, visit the DNR website for contact information of a specialist in your area.

dnr.wi.gov – keywords “forest health staff”

INSECT AND DISEASE IDENTIFICATION

University of Wisconsin Plant Disease Diagnostics Clinic
pddc.wisc.edu/

UNIVERSITY OF WISCONSIN PEST DIAGNOSTIC LAB

www.entomology.wisc.edu/diaglab/entodiag.html

PESTICIDE APPLICATOR TRAINING AND LICENSING FOR STATE CERTIFICATION

University of Wisconsin-Madison
Department of Agronomy, Pesticide Applicator Training
1575 Linden Drive, Madison, WI 53706-1597
Phone: 608-262-7588

NOTIFICATION OF SPILLS: REPORT ALL SPILLS TO THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES

24-hour Emergency Hotline Number 1-800-943-0003
dnr.wi.gov – keyword “spills”

NONNATIVE INVASIVE SPECIES

Nonnative invasive species can be a serious concern for forest regeneration and growth, as well as impacting wildlife habitat and recreation.

For information on invasive species:
dnr.wi.gov – keywords “invasive species”

Invasive species staff:
dnr.wi.gov – keywords “invasive species staff”

Invasive Plants Association of Wisconsin:
www.ipaw.org

Plant Conservation Alliance, Weeds Gone Wild:
www.nps.gov/plants/alien/

PESTICIDE USE

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) is the first point of contact about pesticide use and regulations. They also manage the pesticide applicator certification and licensing in the state of Wisconsin. Information on the pesticide clean sweep program and worker protection standards can also be obtained through Wisconsin DATCP.

Wisconsin DATCP
2811 Agriculture Drive, PO Box 8911
Madison, WI 53708-8911
Phone: 608-224-4500
datcp.wi.gov

FOR INFORMATION ON ENVIRONMENTAL AND HEALTH EFFECTS OF PESTICIDES

U.S. Environmental Protection Agency - Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590
Phone: 800-621-8431
www.epa.gov/pesticide-science-and-assessing-pesticide-risks

WATER CROSSINGS

PERMIT REQUIREMENTS AND DESIGN STANDARDS; INSTALLATION OF BRIDGES AND CULVERTS, CONTACT:

The nearest Wisconsin DNR water management specialist can help you through the permitting process for water crossings. The Wisconsin DNR website has complete information about waterway and wetland permits.
dnr.wi.gov – keyword “waterway”

FOR DESIGN ASSISTANCE, CONTACT:

Natural Resources Conservation Service (NRCS)
Wisconsin State Office
8030 Excelsior Drive, Suite 200
Madison, WI 53719-2726
Phone: 608-662-4422
www.wi.nrcs.usda.gov

FOREST CERTIFICATION

AMERICAN TREE FARM SYSTEM® (ATFS)

ATFS is the oldest third-party forest certification in the world. The ATFS was established in 1941 in response to the need to protect forest resources on private lands, provide advice and assistance to forest owners, and ensure the continued supply of wood and other forest products. ATFS has certified 20.5 million acres of privately owned forestland and more than 74,000 family forest owners. ATFS has been successful in helping forest owners protect water resources, enhance wildlife habitat, and create recreational opportunities – all while harvesting wood in sustainable ways. Some ATFS certified forests are now in their third or fourth generation of sustainable harvests on the same land. • treefarmssystem.org

FOREST STEWARDSHIP COUNCIL® (FSC®)

FSC® is an international nonprofit, multi-stakeholder organization established in 1993 to promote responsible management of the world’s forests.

Its main tools for achieving this are standard setting, independent certification, and labeling of forest products. This offers customers around the world the ability to choose products from socially and environmentally responsible forestry. • www.fsc.org

SUSTAINABLE FORESTRY INITIATIVE® (SFI®)

SFI® is a nonprofit, charitable, independent organization with more than 195 million acres certified to its forest certification standard in the United States and Canada. The rigorous, science-based SFI® standard covers key values such as protection of biodiversity; species at risk and wildlife habitat; sustainable harvest levels; protection of water quality; and prompt regeneration. All SFI® certifications require independent, third-party audits and are performed by internationally accredited certification bodies. www.sfiprogram.org

PRESCRIBED BURNING

BURNING PERMITS

On lands under Wisconsin DNR protection, contact local Wisconsin DNR service centers, ranger stations, and emergency fire wardens. More information on burn permits can be found on the Wisconsin DNR website. dnr.wi.gov – keywords “burn permit”

On lands under U.S. Forest Service (USFS) protection, contact USFS district ranger stations or fire wardens. www.fs.fed.us/organization/Chequamegon-Nicolet%20National%20Forest

On lands outside of Wisconsin DNR or USFS protection, permits might be required from the local township (see government listings in your local telephone directories).

FIRE WEATHER

Current fire weather forecasts, fire danger ratings, and burning permit regulations are available via links on the Wisconsin DNR website. dnr.wi.gov – keyword “fire”

BURNING ASSISTANCE

If you need help conducting prescribed fires, see the Directory of Foresters for the names of consultants that offer prescribed burning services. dnr.wi.gov – keywords “coop forester”

APPENDIX H: GLOSSARY

A

ANGLE OF REPOSE

The maximum slope or angle at which a material, such as soil or loose rock, remains stable (stable angle).

ARCHAEOLOGICAL SITE

A geographic location where archaeological artifacts, features and other materials are found.

B

BANK

The land surface abutting the bed of any navigable waterway which, either prior to any project or alterations of land contours, or as the result of the proposed project or alteration, slopes or drains without complete interruption into the waterway (NR 340.02(2)).

BASAL AREA (BMPs for Water Quality Definition)

The cross-sectional area four-and-one-half feet above ground in square feet of all trees with a diameter of five inches or greater.

BASAL AREA (Forestry Definition)

1. The cross-sectional area of a single stem, including bark, measured at breast height (four-and-one-half feet above ground).
2. The cross-sectional area of all stems in a stand expressed per unit of land area.

BASEFLOW

The portion of streamflow which comes from groundwater.

BEST MANAGEMENT PRACTICES (BMPs)

Practical and economically-achievable practices for preventing or reducing nonpoint source pollution.

BIOLOGICAL DIVERSITY (Biodiversity)

The spectrum of life forms and ecological processes that support and sustain them. Biodiversity occurs at four interacting levels: genetic, species, community, and ecosystem.

BOARD FOOT

The amount of wood contained in an unfinished board one inch thick, 12 inches long, and 12 inches wide.

BROAD-BASED DIP

A surface drainage structure specifically designed to drain water from an access road while vehicles maintain normal travel speeds.

BRUSH BARRIER

A sediment control structure created of slash materials, piled at the top slope of a road or at the outlets of culverts, turnouts, dips, and waterbars.

BUFFER AREA

A designated area around a stream or waterbody of sufficient width to minimize entrance of forestry chemicals (fertilizers, pesticides and fire retardants) into the waterbody.

C

CAVITY TREE

A hollow tree used for the roosting and reproduction of wildlife.

CHECK DAM

A small dam constructed in a gully to decrease the flow velocity, minimize channel scour, and promote deposition of sediment.

CLEARCUTTING

A silvicultural system in which all merchantable trees are harvested within a specified area in one operation to create an even-aged stand.

CLIMAX FOREST

An ecological community that represents the culminating stage of a natural forest succession for its locality and environment.

COARSE WOODY DEBRIS

Stumps and fallen trunks or limbs of more than six inch diameter at the large end.

CO-DOMINANT TREE

A tree whose crown helps to form the general level of the main canopy in even-aged stands, or in uneven-aged stands, the main canopy of the tree's immediate neighbors, receiving full sunlight from above and comparatively little from the sides.

COMMUNITY

An assemblage of plants and animals living together and occupying a given area.

CONTOUR

An imaginary line on the surface of the earth connecting points of the same elevation. It also applies to a line drawn on a map connecting the points of the same elevation. The steeper the slope, the closer the contour lines will be.

CORD

A stack of wood that measures four feet high, four feet wide, and eight feet long (128 cubic feet).

CORDUROY

Logs placed over a wetland to reinforce the natural root mat for the purpose of stabilizing the road foundation.

CROWN (BMPs for Water Quality Definition)

A convex road surface that allows runoff to drain to either side of the road prism.

CROWN (Forestry Definition)

The part of a tree bearing live branches and foliage.

CROWN CLASS

A category of tree based on its crown position relative to those of adjacent trees.

CULL

Any item of production (e.g., tree, log, lumber, seedling) rejected because it does not contain certain specifications of usability or grade.

CULTURAL RESOURCE

An archaeological site, cemetery, historic structure, historic area, or traditional-use area that is of cultural or scientific value.

CULVERT

A metal, wooden, plastic, or concrete conduit through which water can flow under or across roads.

CUMULATIVE EFFECT

The impact on the environment that results from the incremental impact of an action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes such action.

CUT-AND-FILL

Earth-moving process that entails excavating part of an area and then using the excavated material for adjacent embankments or fill areas.

D

DIAMETER (AT) BREAST HEIGHT (DBH)

The diameter of the bole of a tree measured at four-and-one-half feet (1.37 meters) from the ground.

DISKING (Harrowing)

A mechanical method of scarifying the soil to reduce competing vegetation and prepare a site to be seeded or planted.

DOMINANT CROWN CLASS

A tree whose crown extends above the general level of the main canopy, receiving full light from above and partial light from the sides.

DRAINAGE STRUCTURE

Any device or land form constructed to intercept or aid surface water drainage.

DUFF

The accumulations of needles, leaves and decaying matter on the forest floor.

E

ECOSYSTEM

A spatially-explicit, relatively homogeneous unit of the earth that includes all interacting organisms and components of the abiotic environment within its boundaries.

ENDANGERED SPECIES

A species threatened with extinction throughout all or a significant portion of its range.

ENVIRONMENT

The sum of all external conditions affecting the life, development and survival of an organism.

ERODIBLE SOILS

Soils that are likely to have high soil loss when exposed to water runoff. Soils having a Natural Resources and Conservation Service (NRCS) erosion hazard rating of “moderate” or “severe” should be considered erodible. Erosion hazard ratings for different soil types are listed in “Woodland Suitability” tables in NRCS soil survey manuals. Generally, forest soils occurring on 15 to 35 percent slopes have a moderate rating, and soils occurring on greater than 35 percent slopes have a severe rating. Contact your local NRCS office for more information.

EROSION

The process by which the surface of the earth is worn away by the action of wind or water in the form of rain drops, surface runoff or waves.

F

FELLING

The process of cutting down standing trees.

FILL SLOPE

The surface formed where earth is deposited to build a road or trail.

FIRE RETARDANT

Any substance, except plain water, that by chemical or physical action reduces the flammability of fuels or slows their combustion rate.

FIREBREAK

Naturally-occurring or human-made barrier to the spread of fire.

FIRELINE

A barrier used to stop the spread of fire constructed by removing fuel or rendering fuel less flammable by use of retardants.

FLOODPLAIN

Land which has been or may be covered by flood water during the regional floods (floods expected to occur once in every 100 years).

FORD

Submerged stream crossing where the streambed may need to be reinforced to bear intended traffic.

FOREST COVER TYPE

1. A category of forest usually defined by its vegetation, particularly its dominant vegetation as based on percentage cover of trees.
2. The plant species forming a plurality of composition across a given area.

FOREST FILTER STRIP

Area between a stream and construction activities that achieves sediment control by using the natural filtering capabilities of the forest floor and litter.

FOREST HEALTH

The perceived condition of a forest derived from concerns about such factors as its age, structure, composition, function, vigor, presence of unusual levels of insects or disease, and resilience to disturbance.

FOREST MANAGEMENT

The practical application of biological, physical, quantitative, managerial, economic, social, and policy principles to the regeneration, management, utilization, and conservation of forests to meet specified goals and objectives while maintaining the productivity of the forest.

FOREST ROAD

A temporary or permanent road connecting the most remote parts of the forest to existing public roads. They provide access to forestlands for timber management, fish and wildlife habitat improvement, fire control and a variety of recreational activities.

FORWARDING

The operation of moving timber products from the stump to a landing for further transport.

G

GEOTEXTILE

A product used as a soil reinforcement agent and as a filter medium. It is made of synthetic fibers manufactured in a woven or loose nonwoven manner to form a blanket-like product.

GRADE (Gradient)

The slope of a road or trail expressed as a percent of change in elevation per unit of distance traveled.

H

HABITAT

1. A unit area of environment.
2. The place where an animal, plant or population naturally or normally lives and develops.

HABITAT TYPE

1. A land or aquatic unit consisting of an aggregation of habitats having equivalent structure, function and responses to disturbance.
2. An aggregation of units of land capable of producing similar plant communities at climax.

HABITAT TYPE CLASSIFICATION SYSTEM

A site classification system based on the floristic composition of plant communities. The system depends on the identification of potential climax associations, repeatable patterns in the composition of the understory vegetation, and differential understory species. It groups land units with similar capacity to produce vegetation. The floristic composition of the plant community is used as an integrated indicator of those environmental factors that affect species reproduction, growth, competition, and community development. A system used to classify forest plant communities and the sites on which they develop.

HARVESTING (Logging)

The process of gathering a timber crop. It includes felling, skidding/forwarding, on-site processing, and removal of products from the site.

HIGH WATER MARK

See “ORDINARY HIGH WATER MARK.”

I

INTEGRATED PEST MANAGEMENT (IPM)

Selection, integration and use of management actions based on scientific knowledge of forest systems, including insects and pathogens, in order to achieve desirable economic, ecological and sociological forest management goals.

INTERMITTENT STREAM

A stream that flows only after rainfall or snowmelt, and, therefore, is dry most of the year.

INVASIVE SPECIES

Nonnative species including hybrids, cultivars, subspecific taxa, and genetically modified variants whose introduction causes or is likely to cause economic or environmental harm or harm to human health, and includes individual specimens, eggs, larvae, seeds, propagules and any other viable life stages of such species.

L

LAKE

A still waterbody which (1) is navigable; (2) has an ordinary high water mark; and (3) has a bed and banks and is a “reasonably permanent” body of water although it may dry up during periods of drought.

LANDING (Log Deck)

A place where trees and logs are gathered in or near the forest for further processing or transport.

LARGE WOODY DEBRIS (Forestry BMPs for Water Quality)

Large logs, generally at least 12 inches in diameter with an anchored root ball, that have fallen into streams creating stable structures and a diversity of cover conditions and habitat for aquatic organisms.

LEAVE TREES

See “RESERVE TREES.”

LOGGING DEBRIS

See “SLASH.”

LUMP SUM SALE

A timber sale in which the buyer and seller agree on a total price for marked standing trees, or for trees within a defined area before the wood is removed.

M

MANAGEMENT GOAL

A broad, general statement (usually not quantifiable) that expresses a desired state or process to be achieved.

MANAGEMENT OBJECTIVE

A concise, time-specific statement of measurable planned results that correspond to pre-established goals in achieving a desired outcome.

MANAGEMENT PRESCRIPTION

A set of management practices and intensities scheduled for application on a specific area to satisfy multiple goals and objectives.

MERCHANTABILITY

Trees of size and quality suitable for commercial marketing and utilization.

MULCH

A natural or artificial layer of plant residue or other materials covering the land surface that conserves moisture, holds soil in place, aids in establishing plant cover, and minimizes temperature fluctuations.

MULCHING

Providing any loose covering to protect exposed forest soils such as grass, straw, bark, or wood fibers, to help control erosion.

N

NAVIGABLE

A waterway is navigable if it has bed and banks, and it is possible to float a canoe or other small craft in the waterway on a regular reoccurring basis – even if only during spring runoff.

NONNATIVE INVASIVE SPECIES

Plant species accidentally or intentionally introduced from another country or geographic region, having the ability to significantly displace desirable vegetation or reduce crop yields. These plants may also be termed “exotic,” “alien” or “weedy.” They are likely to cause economic or environmental harm, or harm to human health.

NONPOINT SOURCE POLLUTION

Occurs when rainfall or snowmelt runoff moves across the ground, carrying pollutants into streams, lakes, wetlands, and groundwater. For example, soil can become a pollutant when water runoff moves across a road and carries large amounts of soil into a waterbody.

O

OPERABILITY

Level of merchantable volume per acre.

ORDINARY HIGH WATER MARK

The point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily-recognized characteristic.

ORGANIC DEBRIS

Particles of vegetation or other biological material that can degrade water quality by decreasing dissolved oxygen and by releasing organic solutes during leaching.

OUTSLOPE

Shaping the road surface to cause drainage to flow toward the outside shoulder.

OVER MATURE

1. A tree or even-aged stand that has reached the stage of development when it is declining in vigor and health, and reaching the end of its natural life span.
2. A tree or even-aged stand that has begun to lessen in commercial value because of size, decay or other factors.

OVERSTORY

That portion of the trees in a forest forming the uppermost canopy layer.

P

PERENNIAL STREAM

A stream that flows throughout most (i.e., greater than 50 percent) of the year.

POLETIMBER

Hardwood trees ranging in size from five to 11 inches DBH, and conifers ranging in size from five to nine inches DBH.

PRESCRIBED BURNING

The controlled application of fire to wildland fuels in either their natural or modified state, under specified environmental conditions. These conditions allow the fire to be confined to a predetermined area, while at the same time producing the fire intensity and rate of spread required to attain planned resource management objectives.

PRIMARY TYPE

Forest type named after the tree species that is being managed for a harvest cycle, and usually comprises more than 50 percent of the stand.

R

RAKING

A mechanical method of removing stumps, roots and slash from a future planting site.

REGIONAL FLOOD

A flood which is expected to occur on a particular lake, river or stream once every 100 years (also known as a “100-year flood”).

RESERVE TREES

Scattered, living individual trees and/or groups of trees left unharvested within a stand for reasons other than the purpose of regeneration. Synonyms may include leave trees, green tree retention, and standards.

RIPARIAN AREA

The area of land and water forming a transition from aquatic to terrestrial ecosystems along streams, lakes and open water wetlands.

RIPARIAN MANAGEMENT ZONE (RMZ)

Land and vegetation areas next to lakes and streams where management practices are modified to protect water quality, fish and other aquatic resources. These areas are complex ecosystems that provide food, habitat and movement corridors for both aquatic (water) and terrestrial (land) communities as well as helping to minimize nonpoint source pollution impacts to surface water.

RIPRAP

Rock or other large aggregate that is placed to protect streambanks, bridge abutments, outflow of drainage structures, or other erodible sites from runoff or wave action.

ROTATION

In even-aged silvicultural systems, the period between regeneration establishment and final cutting. Rotation may be based on many criteria including culmination of mean annual increment, mean size, age, attainment of minimum physical or value growth rate, and biological conditions.

RUT

Depressions made by the passage of a vehicle or equipment.

S**SAPLINGS**

Trees ranging from one to five inches DBH.

SAWBOLT

A small diameter log that does not meet the minimum specifications for a “sawlog,” but is sorted for sawing rather than being used for chips, pulpwood or fuel. Dimension lumber cut from sawbolts is generally used for low value products such as two inch by four inch studs or wood pallets.

SAWLOG

A cut forest product meeting the minimum specifications for “Sawlog - Board Feet” in Chapter NR 46.02 (22), Wisconsin Administrative Rules.

Position in Tree	Butt or upper
Minimum Diameter ¹ Small End: Hardwoods	10.6”
Minimum Diameter ¹ Small End: Conifers	9.6”
Minimum Length Without Trim ²	8’ (except walnut and cherry which are 4’)
Sweep Allowance ³	____ of diameter small end for each 8’ length
Maximum Scale Deduction for Unsound Defects	50%
Clear Cuttings Free of Knots or Other Defects	No requirements.
Sound or Unsound Surface Defect Limitations	Diameter of knots, rot, holes, etc., may not exceed 1/3 the diameter of the log at the point of occurrence.
Sound End Defects	No requirements.

1 Diameter inside bark.

2 The maximum trim allowance is 8”. Cut products that exceed the 8” trim allowance will be classified as misbucked, and will be scaled as sawlogs at the next whole foot increment.

3 Sweep is defined as the maximum departure distance of a line drawn between the ends of a log from the nearest surface of the log.

SAWTIMBER, LARGE

Standing trees larger than 15 inches in diameter at four-and-one-half feet above the ground.

SAWTIMBER, SMALL

Standing hardwood trees 11 to 15 inches in diameter at four-and-one-half feet above the ground, and conifer trees nine to 15 inches in diameter at four-and-one-half feet above the ground.

SEDIMENT

Soil that has eroded from the land surface, often by overland water flow, that is then transported and deposited away from its original location.

SHEARING

A site preparation method that involves the cutting of brush, trees or other vegetation at ground level using tractors equipped with angled or V-shaped blades.

SILT FENCE

A temporary barrier used to intercept sediment-laden runoff from small areas.

SILVICULTURAL PRESCRIPTION

A planned series of treatments designed to change current stand structure to one that meets management goals and objectives. The prescription normally considers ecological, economic and societal constraints.

SILVICULTURAL SYSTEM

A planned program of vegetative treatment during the entire life of a stand including tending, harvesting and regeneration, which are named after the stand age class structure and regeneration method employed.

SITE

1. The total of environmental conditions surrounding and available to a plant. The physical (climate, topography, soil) and biotic (plants, animals) factors interact to yield the light, heat, water, and chemicals that are directly available and used by the plant, as well as other chemical and mechanical disturbance factors.
2. The area in which a plant or stand grows, considered in terms of its environment, particularly as this determines the type and quality of the vegetation the area can carry.
3. A spatially-explicit, relatively homogeneous portion of land characterized by specific physical and chemical properties that affect ecosystem functions, and where a more or less homogenous forest type may be expected to develop.

SITE INDEX

A species-specific measure of actual or potential forest productivity (usually for even-aged stands) expressed in terms of the average height of trees included in a specified stand component (dominants, codominants, or the largest and tallest trees) at a specified index or base age.

SKID (Skidding)

Short-distance moving of logs or felled trees from the stump to a point of loading.

SKID TRAIL

A temporary, nonstructural travel way for logging equipment, called skidders, to drag felled trees or logs to the landing for further processing, loading and transport to a mill.

SLASH

Any tree tops, limbs, bark, abandoned forest products, windfalls, or other debris left on the land after timber or other forest products have been cut.

SLOPE

Degree of deviation of a surface from the horizontal, measured as a numerical ratio, percent or in degrees. Expressed as a ratio, the first number is the horizontal distance (run) and the second number is the vertical distance (rise), as 2:1. A 2:1 slope is a 50 percent slope. Expressed in degrees, the slope is the angle from the horizontal plane, with a 90° slope being vertical (maximum) and a 45° slope being a 1:1 slope.

SNAG

A standing dead tree.

STAND

1. A contiguous group of trees sufficiently uniform in species composition, structure and age class distribution, and growing on a site of sufficient uniform quality, to be a relatively homogeneous and distinguishable unit.
2. A contiguous group of similar plants.

STAND STRUCTURE

1. The physical and temporal distribution of plants in a stand.
2. The horizontal and vertical distribution of components of a forest stand including the age, height, diameter, crown layers, and stems of trees, shrubs, herbaceous understory, snags, and down woody debris.

STREAM

A watercourse that (1) has an ordinary high water mark; (2) has bed and banks; (3) flows at least periodically; and (4) does not lose its character as a watercourse even though it may become braided in a wetland complex.

SUCCESSION

Gradual supplanting of one community of plants by another.

SUPPRESSED (Overtopped) CROWN CLASS

A tree whose crown is completely overtopped by the crowns of one or more neighboring trees.

T**TAKE**

To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, root up, cut, sever, or to attempt to engage in any such conduct upon an animal or plant. This term is used with discussions on endangered and threatened animal or plant species.

THREATENED SPECIES

A species likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

TIMBER HARVESTING

See "HARVESTING (Logging)."

TRANSPIRATION

Evaporation which enters the atmosphere from the soil through plants.

TURNOUT (BMPs for Water Quality)

A drainage ditch that drains water away from roads and road ditches.

U**UNDERSTORY**

All forest vegetation growing under an overstory.

V**VISUAL QUALITY**

A subjective measure of the impact that viewing an object, landscape or activity has on a person's perception of attractiveness.

W**WATER QUALITY**

The chemical, physical and biological characteristics of water, usually in respect to its suitability for a particular purpose.

WATERBAR

A shallow trench or diversion dam which diverts roadside ditch and surface water runoff from roads (inactive or closed), firebreaks, or skid trails (active or inactive) into a dispersions area. Waterbars are used to minimize erosion and provide conditions for natural or artificial revegetation.

WATERSHED

The surrounding land area that drains into a lake, river or river system.

WET LINE

A line of water or water and chemical fire retardant sprayed along the ground, and which serves as a temporary fireline from which to ignite or stop a low-intensity fire.

WETLAND

An area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic (water-loving) vegetation and which has soils indicative of wet conditions.

WILDFIRE

Uncontrolled fire occurring in forestland, brushland and/or grassland.

WILDLIFE

All forms of life that are wild, including plants, animals and microorganisms.



WISCONSIN DEPARTMENT OF NATURAL RESOURCES NOTICE OF FINAL GUIDANCE & CERTIFICATION

Pursuant to ch. 227, Wis. Stats., the Wisconsin Department of Natural Resources has finalized and hereby certifies the following guidance document.

DOCUMENT ID

FA-20-0005

DOCUMENT TITLE

Wisconsin Forest Management Guidelines

PROGRAM/BUREAU

Forest Economics and Ecology, Applied Forestry Bureau

STATUTORY AUTHORITY OR LEGAL CITATION

S. 823.075, Wis. Stats. & NR 1.25, Wis. Admin. Code

DATE SENT TO LEGISLATIVE REFERENCE BUREAU (FOR PUBLIC COMMENTS)

2/10/2020

DATE FINALIZED

4/6/2020

DNR CERTIFICATION

I have reviewed this guidance document or proposed guidance document and I certify that it complies with sections 227.10 and 227.11 of the Wisconsin Statutes. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is not explicitly required or explicitly permitted by a statute or a rule that has been lawfully promulgated. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is more restrictive than a standard, requirement, or threshold contained in the Wisconsin Statutes.

March 27, 2020

Signature

Date